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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

SURGICAL INSTRUMENT SERVICE
COMPANY, INC.,

Plaintiff,

v.

INTUITIVE SURGICAL, INC.,

Defendant.

Case No. 3:21-cv-03496-AMO

**DEFENDANT'S NOTICE OF MOTION
AND MOTION IN LIMINE NO. 2 TO
EXCLUDE DEUTSCHE BANK
ANALYST REPORTS AND RELATED
TESTIMONY**

Date: November 25, 2024
Time: 11:00 a.m.
Courtroom: 10

The Honorable Araceli Martínez-Olguín

NOTICE OF MOTION AND MOTION

TO ALL PARTIES AND THEIR ATTORNEYS OF RECORD:

PLEASE TAKE NOTICE that on November 25, 2024 at 11:00 a.m., or as soon thereafter as this matter may be heard before the Honorable Araceli Martínez-Olguín, District Judge in the United States District Court for the Northern District of California, at 450 Golden Gate Avenue, Courtroom 10, 19th Floor, San Francisco, CA 94102, Defendant Intuitive Surgical, Inc. (“Intuitive”) will and hereby does move the Court for an order prohibiting: (1) Plaintiff Surgical Instrument Service Co., Inc. (“SIS”) from either introducing into evidence or referencing the Deutsche Bank analyst reports dated January 27, 2020 and February 20, 2020 (the “Reports”); and (2) Plaintiff SIS’s experts from incorporating the opinions of the Reports’ authors as part of those experts’ own opinions.

This Motion is made on the grounds that federal statutes and case law, including but not limited to Fed. R. Evid. 403, 701, 702, 801, and 802, authorize the relief that Intuitive seeks. This Motion is based upon this Notice of Motion and Motion, the accompanying Memorandum of Points and Authorities in support thereof, the accompanying Declaration of Paul D. Brachman and attached exhibits, any reply or other supplemental briefing, and the oral argument of counsel.

1 SIS intends to try to prejudice Intuitive at trial by introducing and relying on two Deutsche
2 Bank analyst reports, dated January 27, 2020 and February 20, 2020, Exs. 1-2,¹ that opine, without
3 any reliable basis, on issues such as the “safety risk” posed by unauthorized third-party
4 modification of EndoWrists, the “FDA’s stance on third-party servicing of medical devices,” and
5 the “implications” of then-ongoing litigation between Intuitive and third-party repair provider
6 Restore. Ex. 1 at -2997, -2999. The lack of reliability of these opinions is apparent on the face of
7 the actual reports. To begin, the reports were authored by financial analysts who plainly have no
8 expertise in matters such as medical device safety and FDA regulations, and were never proffered
9 as experts to testify on those subjects in this case. In addition, each report comes with an express
10 disclaimer that Deutsche Bank “may have a conflict of interest that could affect the objectivity of
11 this report,” and each states that “Deutsche Bank makes no representation as to its accuracy or
12 completeness.” *See, e.g., id.* at -2993, -3010. For these and other reasons, the court in a
13 substantially similar antitrust lawsuit against Intuitive involving “repaired” EndoWrists precluded
14 the plaintiff and its experts in that case from introducing and relying on the very same Deutsche
15 Bank reports.

16 Nonetheless, SIS seeks to admit these reports into evidence for the truth of the matters
17 asserted, and its experts seek to incorporate the authors’ opinions as part of those experts’ own
18 opinions. For example, SIS expert Russell Lamb relies on the January 27, 2020 Deutsche Bank
19 report as “[e]vidence . . . that the EndoWrist surgical instruments repaired by third parties such as
20 SIS were viewed as functionally equivalent to the replacement EndoWrist surgical instruments
21 sold by Intuitive.” Ex. 3 at 81. Dr. Lamb also adopts wholesale the Deutsche Bank analyst’s
22 opinion that “there was ‘[n]o evidence that repaired da Vinci instruments specifically pose a risk
23 to patient safety – in fact, au contraire.’” *Id.* He further quotes the January 27 report as the basis
24 for his opinion that “[b]ottom line regarding safety is that, despite Intuitive’s view on this point,
25 any material threat to patient safety would surely have prompted immediate FDA field action to
26

27
28 ¹ All references to “Ex.” refer to exhibits to the Declaration of Paul D. Brachman in Support of
Defendant’s Motion in Limine No. 2 to Exclude Deutsche Bank Analyst Reports and Related
Testimony.

1 stop their usage, which has not been the case.” *Id.* And he quotes and relies on purported
 2 “feedback” received from unidentified surgeons. *Id.* at n.323. In addition, SIS expert Richard
 3 Bero relies on the February 20, 2020 Deutsche Bank report for portions of his damages opinion,
 4 including the report’s assertion that “each [EndoWrist] Instrument could be repaired three times.”
 5 Ex. 4 at 52.

6 SIS should be precluded from introducing these analyst reports into evidence because they
 7 contain multiple layers of inadmissible hearsay, as well as improper lay and/or expert opinions,
 8 and because any probative value they may have is substantially outweighed by the risk of unfair
 9 prejudice.² Similarly, SIS’s experts should not be permitted to introduce this unsubstantiated
 10 hearsay to the jury under the guise of their own opinions because it is inherently unreliable and not
 11 of a type reasonably relied upon by experts in forming opinions on the subject. The use of such
 12 opinions at trial by SIS can only confuse, mislead and prejudice the jury. Thus, the reports, and
 13 all related testimony or arguments concerning the opinions in the reports, should be excluded.

14 **I. THE REPORTS CONSTITUTE INADMISSIBLE HEARSAY**

15 The Deutsche Bank analyst reports consist entirely of statements made outside of court that
 16 are being offered to prove the truth of the matters asserted, and thus are textbook examples of
 17 inadmissible hearsay under Federal Rule of Evidence 801/802. *See, e.g., In re Sybase, Inc. Sec.*
 18 *Litig.*, 48 F. Supp. 2d 958, 960 (N.D. Cal. 1999). Indeed, the analyst reports are replete with
 19 statements purportedly made by unidentified “surgeons and supply chain executives,” which
 20 constitute inadmissible double-hearsay. Ex. 1 at -2993. Nor are the reports subject to any hearsay
 21 exception.

22 They do not fall under the exception for “Market Reports and Similar Commercial
 23 Publications” (Fed. R. Evid. 803(17)) because they are not “objective compilations of easily
 24 ascertainable facts of the sort contemplated by [Rule 803(17)],” but instead consist of subjective
 25 opinions and conclusions. *JIPC Mgmt., Inc. v. Incredible Pizza Co.*, 2009 WL 8591607, at *24
 26 (C.D. Cal. July 14, 2009). As the court noted in *Bianco v. Globus Med., Inc.*, although such “stock
 27

28 ² SIS also should be precluded from entering into evidence any testimony concerning the content
 of these reports, including but not limited to the deposition testimony of Imron Zafar, the Deutsche
 Bank analyst who had primary responsibility for preparing the reports.

1 analyst reports” may “contain some objective information, they [also] contain a substantial amount
2 of subjective analysis of [defendant medical device manufacturer], its prospects, and its position
3 in the market for medical devices,” and thus “do not fall within the scope of Rule 803(17).” 2014
4 WL 119285, at *1-2 (E.D. Tex. Jan. 12, 2014).

5 The Deutsche Bank analyst reports also are not admissible under the “Business Records”
6 exception (Fed. R. Evid. 803(6)). Documents are not “business records” merely because they are
7 found in the files of a business entity. Rather, for a document to qualify as a “business record”
8 under Rule 803(6), it must satisfy each of the following three criteria: (1) it must be the regular
9 practice of the business entity to make such documents, (2) the documents must be made at or near
10 the time by, or from information transmitted by, a person with knowledge, and (3) it must be the
11 regular practice of the business entity to keep such documents. *See* Fed. R. Evid. 803(6).
12 Moreover, even where these three criteria are met, if “the source of information or the method or
13 circumstances of preparation indicate lack of trustworthiness,” the document still must be
14 precluded. *See id.* Based on these factors, it is well-settled that analyst reports do not qualify as
15 business records for purposes of Rule 803(6). *See, e.g., In re Cirrus Logic Sec. Litig.*, 946 F. Supp.
16 1446, 1468–69 (N.D. Cal. 1996) (rejecting plaintiffs’ argument that analyst reports were
17 admissible under the business records exception to the hearsay rule).

18 That the Deutsche Bank analyst reports are not sufficiently reliable to be admitted for the
19 truth of the matter asserted is evidenced by the fact that the reports themselves contain disclaimers
20 noting that the information contained in them may not be reliable. Indeed each report includes an
21 express disclaimer that “Deutsche Bank makes no representation as to [the report’s] accuracy or
22 completeness.” *See, e.g., Ex. 1* at -3010. In essence, the reports are marketing tools used to
23 promote the brokerage firm’s products. Marketing tools, by their very nature, lack the level of
24 reliability required to surmount the hearsay rule.

25 Compounding the unreliability of the reports is the fact that Deutsche Bank (or its analysts)
26 may have an added incentive in rating the stock, either because it may have a long or short position
27 in the security, or because it may have an investment banking relationship with the company—or
28 with a competitor—that it wishes to enhance. Indeed, each report includes an express disclaimer

1 that Deutsche Bank “may have a conflict of interest that could affect the objectivity of this report.”
 2 *See, e.g., id.* at -2993. This potential conflict of interest further renders the analyst reports less
 3 than reliable. There simply is no justification for introducing hearsay dripping with such self-
 4 motivation.³

5 For these same reasons, the Deutsche Bank reports lack “sufficient guarantees of
 6 trustworthiness” to qualify for the residual hearsay exception under Fed. R. Evid. 807. *See, e.g.,*
 7 *In re Zetia (Ezetimibe) Antitrust Litig.*, 2023 WL 4156858, at *4 (E.D. Va. Apr. 5, 2023) (finding
 8 that “financial analysts’ reports . . . prepared as guidance for valuing the company’s stock . . . are
 9 replete with double hearsay and do not fit within any hearsay exception”).

10 **II. THE REPORTS CONSTITUTE IMPROPER LAY AND EXPERT TESTIMONY**

11 The Deutsche Bank analyst reports are independently inadmissible under Rules 701 and
 12 702 since they are either improper lay opinion or improper expert opinion. The very fact that SIS’s
 13 own experts have adopted wholesale certain opinions in the reports—and purport to offer them as
 14 evidence in support of those experts’ opinions on the same subjects—illustrates that the opinions
 15 expressed in the reports require the sort of specialized knowledge reserved for expert testimony.
 16 That is why the court in *Zetia*—a case involving claims that two pharmaceutical companies
 17 conspired to delay generic competition for the branded cholesterol medication Zetia—found that
 18 financial analyst reports opining on the strength and merits of the issues in the litigation not only
 19 constitute inadmissible hearsay, but also “constitute undisclosed expert opinion.” *Id.* Here, the
 20 Deutsche Bank reports opine on, among other things, hospital demand for third-party “repaired”
 21 EndoWrists, the safety risk posed by those repairs, and whether FDA approval is required for such

23 ³ In attempting to defend the objectivity of the Deutsche Bank analyst reports, SIS’s expert Dr.
 24 Lamb provided an additional reason for why they are untrustworthy. Dr. Lamb testified that “at
 25 the time that Deutsche Bank wrote its analyst report, its incentives would be in a different position
 26 than that of a deponent once a lawsuit has been filed which might be, might create a different
 27 outcome for the stock of a company that an analyst had offered an opinion about. . . . [O]ne of the
 28 things that’s useful about analyst reports like this, that are historical in nature, is that they predate
 any litigation that we’re looking at in a way that makes the, makes the analysis more objective.”
 Ex. 5 at 93:9-23. In fact, both of the Deutsche Bank reports post-date the filing of an antitrust
 lawsuit against Intuitive by a third-party repair company (Restore Robotics). And, that lawsuit—
 and its “implications” for Intuitive and its business—are expressly discussed in the reports. *See,*
e.g., Ex. 1 at -2999. According to Dr. Lamb’s own reasoning, that causes the reports to be less
 than objective.

1 repairs. *See, e.g.*, Ex. 1 at -2995-98. Yet the reports do not sufficiently detail the facts, data,
2 principles or methods used to arrive at their conclusions on these subjects, falling well short of
3 Rule 702's requirements. The reports, in fact, expressly disclaim any objectivity or reliability.
4 And none of the authors of the reports were ever disclosed as experts under Fed. R. Civ. P. 26(a)(2).
5 Thus, the reports do not come close to satisfying the stringent requirements of Rule 702.

6 Nor can SIS disguise the reports as lay opinion under Rule 701. Lay witnesses may testify
7 as to their opinions only if the testimony is "rationally based on the witness's perception," is
8 "helpful to clearly understanding the witness's testimony or to determining a fact in issue," and is
9 "not based on scientific, technical, or other specialized knowledge within the scope of Rule 702."
10 Fed. R. Evid. 701. The Deutsche Bank reports fail each prong of this test. Deutsche Bank purports
11 to reach the opinions in its reports based on "conversations with several da Vinci surgeons and
12 supply chain executives," as well as from their review and interpretation of an "FDA Report on
13 the Quality, Safety, and Effectiveness of Servicing of Medical Devices" and "the FDA's MAUDE
14 database." Ex. 1 at -2993, -2997-98. There is no witness whose perception yielded the reports'
15 conclusions because the "da Vinci surgeons and supply chain executives" purportedly interviewed
16 are unidentified and unknown. Nor does an investment analyst's review of FDA documents and
17 databases help to better understand the meaning of those documents. Moreover, the reports are
18 replete with opinions that are subject to Rule 702, and SIS cannot use purported lay testimony as
19 an end-run around Rule 702's reliability requirements and the Federal Rules of Civil Procedure's
20 disclosure requirements. *See Hirst v. Inverness Hotel Corp.*, 544 F.3d 221, 227 (3d Cir. 2008).

21 The deposition testimony of Mr. Zafar, the Deutsche Bank analyst who had primary
22 responsibility for preparing the reports, further confirms these infirmities. Mr. Zafar conceded that
23 the reports reflect his own "conclusions and opinions" based on interviews with individuals he
24 could not name or identify. Ex. 6 at 39:17-40:4, 85:12-86:2. And he acknowledged that his "basis
25 for concluding that any material threat to patient safety would have prompted . . . FDA action"
26 was simply his own "logic." *Id.* at 84:11-85:7. The mere fact that Mr. Zafar repeated in his
27 deposition testimony many of the same improper opinions as in the reports does not cause those
28 opinions to pass muster under Rules 701 and 702. His deposition testimony suffers from the same

1 flaws as the reports themselves and should be excluded for the same reasons. Indeed, in his
2 deposition, Zafar went beyond the opinions set forth in the reports themselves, and opined that
3 Intuitive is a “monopolist.” *Id.* at 16:15-21, 17:23-18:6, 28:22-25, 215:20-25. As a research
4 analyst for a financial institution, he plainly does not possess the specialized knowledge necessary
5 to reach such an opinion—which is one of the principal subjects of expert economic testimony in
6 this case, as in nearly every antitrust case—and even if he did, such testimony still would run afoul
7 of Rule 702 and Federal Rule of Civil Procedure 26(a)(2).

8 **III. THE REPORTS SHOULD BE EXCLUDED UNDER RULE 403**

9 The Deutsche Bank analyst reports also should be excluded under Rule 403 because
10 whatever probative value they have (which is zero or close to it) is substantially outweighed by
11 the risk of unfair prejudice. The reports have no probative value because they are based on an
12 incomplete record and the “da Vinci surgeons and supply chain executives” purportedly
13 interviewed are unknown and unidentified. Ex. 1 at -2993. The reports do not even include any
14 quotes attributed to those unidentified witnesses, much less any representation—or even
15 suggestion—that the summary of what they said is complete and accurate. And Deutsche Bank
16 does not claim to have spoken to anyone at the FDA before reaching its opinion that the “FDA’s
17 comfort around this practice regarding patient safety is quite clear.” *Id.*

18 Despite these fatal infirmities, there is a real risk that the jury will have the misimpression
19 that the reports are authoritative because they come from a well-known financial institution, or are
20 a surrogate for the actual views of surgeons, hospitals and/or the FDA. Indeed, SIS’s own experts
21 appear to be under this misimpression, or else are trying to invite it. Dr. Lamb, for instance,
22 testified that “how I view the reports is whoever’s name is attached as an author is secondary, to
23 me, to the imprimatur of Deutsche Bank.” Ex. 5 at 90:13-16. But the notion that the opinions in
24 these reports carry Deutsche Bank’s “imprimatur” is misleading at best. The reports themselves
25 say that they “reflect the personal views of the undersigned lead analyst(s),” and “do not
26 necessarily reflect the opinions of Deutsche Bank.” Ex. 1 at -3008, -3010. SIS’s intended use of
27 these reports can thus only sow confusion with the jury, as reflected by Dr. Lamb’s testimony.
28

1 **IV. SIS’S EXPERTS SHOULD BE PROHIBITED FROM ACTING AS A**
 2 **MOUTHPIECE FOR THIS INADMISSIBLE EVIDENCE**

3 Finally, SIS’s experts should likewise be prohibited from acting as a mouthpiece for this
 4 inadmissible evidence. This is a blatant attempt to introduce hearsay to the jury “under the guise
 5 that the testifying expert used the hearsay as the basis of his testimony.” *Malletier v. Dooney &*
 6 *Bourke, Inc.*, 525 F. Supp. 2d 558, 666 (S.D.N.Y. 2007). Indeed, in *Rebotix Repair, LLC v.*
 7 *Intuitive Surgical, Inc.*, the court rejected an attempt by another third-party repair company
 8 (Rebotix) to introduce the very same January 27, 2020 Deutsche Bank analyst report through its
 9 expert witness. *See* 2022 WL 3226794, at *5 (M.D. Fla. Aug. 10, 2022). There, the expert sought
 10 to rely on the report for his opinion that “companies like Rebotix do not need Section 510(k)
 11 clearance.” *Id.* The court noted that while “Rule 703 provides that an expert may base his opinion
 12 on inadmissible facts or data, including hearsay, it must be of a type reasonably relied upon by
 13 experts in the particular field in forming opinions or inferences upon the subject,” and that although
 14 “courts have afforded experts wide latitude in picking and choosing sources on which to base
 15 opinions, Rule 703 nonetheless requires courts to examine the reliability of these sources.” *Id.*
 16 (citation and internal quotations omitted). The court found no evidence that “the Deutsche Bank
 17 report is of a type reasonably relied upon by experts in the field in forming their opinions,” and
 18 thus “to the extent [the expert] wishes to rely on the Deutsche Bank document . . . he may not do
 19 so.” *Id.* (internal quotations omitted). The same result is merited here.

20 For these reasons, SIS should not be permitted to use Rule 703 as a backdoor to disclose
 21 otherwise inadmissible hearsay opinions. *See* 29 Charles Alan Wright & Arthur R. Miller, *Federal*
 22 *Practice & Procedure* § 6273 (2d ed. 2024) (“Rule 703 does not authorize admitting hearsay on
 23 the pretense that it is the basis for expert opinion when, in fact, the expert adds nothing to the out-
 24 of-court statements other than transmitting them to the jury.”).

25 **CONCLUSION**

26 Intuitive requests that the Court grant this motion.
 27
 28

1 Dated: October 28, 2024

By: /s/ Kenneth A. Gallo
Kenneth A. Gallo

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*Attorneys for Defendant
Intuitive Surgical, Inc.*

CERTIFICATE OF SERVICE

On October 28, 2024, I caused a copy of Intuitive's Motion in Limine No. 2 to Exclude Deutsche Bank Analyst Reports to be electronically served via email on counsel of record for Surgical Instrument Service Company, Inc.

Dated: October 28, 2024

By: /s/ Kenneth A. Gallo
Kenneth A. Gallo

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Attorneys for Defendant Intuitive Surgical, Inc.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

SURGICAL INSTRUMENT SERVICE
 COMPANY, INC.,

Plaintiff,

v.

INTUITIVE SURGICAL, INC.,
Defendant.

Case No. 3:21-cv-03496-AMO

**DECLARATION OF PAUL D.
 BRACHMAN IN SUPPORT OF
 DEFENDANT'S MOTION IN
 LIMINE NO. 2 TO EXCLUDE
 DEUTSCHE BANK ANALYST
 REPORTS AND RELATED
 TESTIMONY**

The Honorable Araceli Martínez-Olguín

1 I, PAUL D. BRACHMAN, declare as follows:

2 1. I am an attorney licensed to practice in New York and the District of Columbia,
3 and am admitted *pro hac vice* to practice before this Court. I am a partner with the law firm of
4 Paul, Weiss, Rifkind, Wharton & Garrison LLP (“Paul, Weiss”), counsel for Intuitive Surgical,
5 Inc. (“Intuitive”) in this matter. I have personal knowledge of the facts set forth herein, and if
6 called to testify, I could and would testify competently hereto.

7 2. Attached to this declaration as **Exhibit 1** is a true and correct copy of a Deutsche
8 Bank Research report on Intuitive Surgical dated January 27, 2020 and produced at Intuitive-
9 00552993-3014.

10 3. Attached to this declaration as **Exhibit 2** is a true and correct copy of a Deutsche
11 Bank Research report on Intuitive Surgical dated February 20, 2020 and produced at Intuitive-
12 00566055-82.

13 4. Attached to this declaration as **Exhibit 3** is a true and correct copy of the Expert
14 Report of Dr. Russell L. Lamb dated December 2, 2022, which was previously filed on the
15 docket in this matter at Dkt. 230-04.

16 5. Attached to this declaration as **Exhibit 4** is a true and correct copy of the Expert
17 Report of Richard F. Bero dated December 2, 2022, which was previously filed on the docket in
18 this matter with redactions to protect confidential material at Dkt. 229-45.

19 6. Attached to this declaration as **Exhibit 5** is a true and correct copy of excerpts of
20 the transcript of the deposition of Russel Lamb, Ph.D, taken in this matter, on March 20, 2023.

21 7. Attached to this declaration as **Exhibit 6** is a true and correct copy of excerpts of
22 the transcript of the deposition of Imron Zafar taken in the matter of *In re: da Vinci Surgical*
23 *Robot Antitrust Litigation*, No. 21-cv-03825-AMO (N.D. Cal.), on November 1, 2022.

24
25 Dated: October 28, 2024

By: /s/ Paul D. Brachman

26 PAUL D. BRACHMAN

FILER'S ATTESTATION

I, Kenneth A. Gallo, am the ECF User whose ID and password are being used to file this document. In compliance with Civil Local Rule 5-1(i)(3), I hereby attest that the signatory identified above has concurred in this filing.

Dated: October 28, 2024

By: /s/ Kenneth A. Gallo
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EXHIBIT 1

to

**PAUL D. BRACHMAN DECLARATION IN SUPPORT OF
DEFENDANT'S MOTION IN LIMINE NO. 2
TO EXCLUDE DEUTSCHE BANK ANALYST REPORTS
AND RELATED TESTIMONY**

Deutsche Bank
Research



Rating
Hold

North America
United States

Health Care
Medical Supplies &
Devices

Company
Intuitive Surgical

Reuters ISRG OQ Bloomberg ISRG US Exchange NMS Ticker ISRG

Date
27 January 2020

Recommendation
Change

Price at 24 Jan 2020 (USD)	589.20
Price Target	595.00
52-week range	615.00 - 458.27

New Self-Manufactured Competitive Risk; Downgrade to Hold

Portfolio Manager Summary

With impending launch of new surgical robot systems including Medtronic's Hugo, the impact on Intuitive and its ability to sustain growth that has been best-in-class across large cap medtech over the past several years as it faces competition for the first time has been a big area of investor focus. We have remained of the view that Intuitive is well-positioned for sustained leadership in a global surgery market that remains highly underpenetrated and the myriad competitive advantages its decade-plus of market incumbency bestows. However, our work has identified a new competitive threat, one that we expect to effect a an increasingly meaningful headwind to Intuitive's US Instruments & Accessories segment over the next couple years, yet we believe is being fully overlooked by the Street.

Our extensive due diligence spanning several months - including conversations with several da Vinci surgeons and supply chain executives (detailed herein) - yielded confirmation that a growing number of hospital customers, including world-renowned academic centers and even large hospital systems, have begun or are in late stage deliberations/discussions to potentially soon begin using repaired da Vinci instruments supplied by third-parties. Meaningful operating cost savings opportunity is the key driver compelling hospitals to consider using these repaired da Vinci instruments.

Repaired da Vinci instruments were all manufactured by Intuitive and designed to become disabled for use beyond 10x, but third parties like Restore Robotics have developed technologies to repair these used devices, confirm that functionality and condition have been restored to *de novo* specifications, and then ship them back to hospitals for additional use. Notably, these devices are typically repairable up to four times. Third party servicing of medical devices has been ongoing for decades, and FDA's comfort around this practice regarding patient safety is quite clear.

Given the potential impact to its business, not surprisingly Intuitive is pushing back hard against third parties that have now begun engaging in da Vinci instrument repairs. In speaking with Intuitive management, the company posits that device repairing poses a significant risk to patient safety and believes third parties are doing so unlawfully. We heard second-hand accounts from hospitals of Intuitive's commercial team aggressively pushing back including actions to discontinue supplying products and even taking legal action for these customers' engagement

Valuation & Risks

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Key Changes

TP	610.00 to 595.00	↓	-2.5%
Rating	Buy to Hold	↓	
EPS (USD)	12.54 to 12.77	↑	1.9%
Revenue (USDm)	4,410 to 4,478	↑	1.6%

Source: Deutsche Bank

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with suppliers of repaired instruments. At the same time, in our conversations with surgeons who have started using repaired instruments, these hospitals have not experienced blowback from Intuitive regarding this.

While the longer term impact will ultimately be dependent to a large extent on outcomes of ongoing litigation, our checks indicate that utilization of repaired robotic instruments is starting to get traction. Having been commercially active in this segment for only about a year, we believe Restore Robotics' customer base currently comprises a few dozen hospitals, which in the context of the US market broadly equates to very modest penetration of Intuitive's installed base.

However, based on a number of factors we think usage will likely continue to expand at an accelerating pace and thereby become an increasingly material headwind to Intuitive's business over the next couple years. Our top-line impact analysis detailed in this note suggests that, even conservatively assuming just 4-5% unit penetration of *de novo* instruments, this headwind could negatively impact total company top line growth to the tune of 3-4% in 2021.

Updating revenue and earnings forecasts; downgrading to Hold. We have updated our model to account for the impact of this headwind from repaired instruments, specifically by decreasing our presumed revenue per procedure – only slightly for 2020 and more meaningfully in 2021. Our updated revenue and estimates also contemplate 2020 guidance metrics and commentary provided on last week's 4Q earnings call. Notably, the company's outlook on margins and expenses for the year drove some meaningful revisions to our P&L assumptions including tempered GM, higher opex levels than we had previously assumed, and a somewhat higher effective tax rate. All told, our updated 2020 revenue and EPS estimates are \$5.028B and \$13.58, respectively, versus to \$5.041B and \$14.35 previously. For 2021, our forecasts go to \$5.563B and \$15.35, down from \$5.703B and \$16.50 previously.

Our new price target is \$595 (down from \$610) and based on a 39x FTM multiple applied to our updated earnings estimate. In light of this emerging new headwind from repaired da Vinci instruments, we are now employing a somewhat lower target multiple versus 42x previously. As such, the shares appear fairly valued at current levels with limited upside potential over the next 12 months, and we are therefore lowering our rating from Buy to Hold. Upside risks include less-than-expected encroachment from repaired instruments on Intuitive's I&A segment, delays in competitor robot launches, and significant upside to procedure forecasts. Downside risks include more significant impact from repaired instruments, greater-than-expected share capture from Medtronic, and slowing procedure growth.

Adoption likely to accelerate over next couple years



When asked on the 2Q19 earnings call about the impact of repaired da Vinci instruments on its business, Intuitive noted at that point that it had seen no material impact. However, based on our work, we believe usage of these repaired devices is likely to expand meaningfully across Intuitive's US installed base over the next couple years – thereby having an increasingly negative impact on the company's top line.

Expanded offering of repaired instruments. Instrument repairs are currently limited to products within Intuitive's prior-generation S/Si product family, which based on our analysis address only about a quarter of US I&A segment revenues. However, third-party offerings are expected to be expanded to include corresponding X/Xi devices imminently, thereby increasing the addressable market to over half of the company's business.

Estimated US I&A segment revenues addressable by repaired instruments

	2018	2019
S/Si instruments	35%	23%
X/Si instruments	29%	35%
Total	64%	58%

Our feedback suggests this may compel more hospitals to engage with these third parties given the significantly greater cost-savings opportunity from this higher mix of serviced devices. Notably, Restore management indicated that its facilities are readily scalable so that output of repaired instruments can be expanded fairly quickly should customer demand increase meaningfully over the next couple years as we anticipate.

Source: Global Healthcare Exchange LLC, Deutsche Bank estimates

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Adoption likely to accelerate over next couple years (2)



Substantially expanded sales & distribution reach. Medline Industries, a major healthcare distributor that generates >\$10 billion in annual sales with a well-established and expansive customer network, has entered the fray and is now working with Restore Robotics as a distributor of repaired da Vinci devices. While Restore had already partnered with several other smaller regional distributors, the addition of Medline dramatically expands the commercial reach of these products.

- The secondary market for reprocessed/repairs devices remains a top focus area for Medline, which actually recently established a dedicated business called Renewal to address this large and growing segment.
- In speaking with Medline, the company clearly regards this segment and robotic instruments in particularly as a growth opportunity and is investing accordingly in terms of building out a dedicated sales and marketing group.
- In fact, multiple hospitals we talked to whose robotics programs are not presently using repaired da Vinci instruments indicated that they became aware of this offering only recently from conversations with Medline reps.

Proof-of-concept: favorable experience amongst early adopters. Based on the overall positive feedback we've gotten from early adopters – which, as noted, includes highly reputable hospitals – the favorable proof-of-concept experience could compel more hospitals to consider engaging with third-party suppliers of repaired da Vinci instruments.

FDA and patient safety considerations



Safety concerns unlikely to be an impediment. The key fundamental argument we've heard from Intuitive in objection to third-party repairing of its devices is the safety risk it poses to patients undergoing robotic surgery. Based on our work, we conclude that this is unlikely to stymie uptake of these instruments for several reasons:

- Third-party servicing of medical devices has been widespread across the industry for many years, including large segments like endoscopes and surgical devices;
- Third parties engaged in this practice are closely regulated and, per figures cited by the FDA, there are close to 20K companies just in the US that are in the business of servicing used medical devices;
- **FDA's stance on third-party servicing of medical devices is clear.** Not surprisingly, the agency has been scrutinizing this practice for many years, and our examination of the FDA's perspective on this matter shows quite clearly the agency's comfort around the practice with respect to safety. The agency held a two-day public workshop on this topic in 2016, and in May 2018 released key findings and official stance in its report, *FDA Report on the Quality, Safety, and Effectiveness of Servicing of Medical Devices*.

The document states that there is insufficient basis to "justify imposing additional/different, burdensome regulatory requirements at this time; rather, the objective evidence indicates that many OEMs and third-party entities provide high quality, safe, and effective servicing of medical devices." In fact, FDA posits that "The continued availability of third party entities to service and repair medical devices is critical to the functioning of the U.S. healthcare system."

Source: FDA.gov, Deutsche Bank estimates

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FDA and patient safety considerations (2)



- **No evidence that repaired da Vinci instruments specifically pose a risk to patient safety – in fact, au contraire.** Restore Robotics has been in the business of third-party medical device servicing for well over a decade. Its production facilities all operate under strict regulatory oversight and have not received any FDA citations for infractions of manufacturing standards. We confirmed that Restore's production facilities and specifically those where da Vinci instruments are repaired are compliant with regulatory standards including ISO 1245 certification. In fact, we note that one of its subsidiaries has for several years been an OEM supplier with some of the largest multinational medtech companies among its customers.
- Additionally, clinicians have experienced no known safety issues, with zero MDRs documented in the FDA's MAUDE database from the thousands of repaired instruments that have been used to date.
- All da Vinci instruments being repaired are 510(k) approved, and we would point out that the predicate surgical devices are not bound by any useful limitations and further that serviced instruments are subject to rigorous QC scrutiny by third-party suppliers prior to shipment to hospitals for additional use.

Bottom line regarding safety is that, despite Intuitive's view on this point, any material threat to patient safety would surely have prompted immediate FDA field action to stop their usage, which has not been the case.

Source: FDA.gov, Deutsche Bank estimates

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Litigation: Restore Robotics v. Intuitive Surgical



Developments in ongoing litigation will ultimately have significant implications, though resolution likely years away.

- In February 2019, Restore Robotics filed an antitrust lawsuit against Intuitive in the US District Court in the Northern District of Florida.
- In response, Intuitive filed a series of motions to dismiss the plaintiff's claims, though notably these efforts to dismiss the case were denied by the presiding District Court judge.
- Intuitive subsequently filed a countersuit against Restore Robotics comprising six counts that include unlawful business practices and fraud.

The case is currently in discovery phase and a jury trial is scheduled to commence in 2022, which barring settlement and potential for either side to appeal the jury's verdict indicates that resolution is likely several years away. And while we are not lawyers and thus not qualified to opine on the voracity of either party's claims in the lawsuit/countersuit nor handicap the potential outcomes, and despite the fact that final resolution is likely years away, we think investors should be cognizant of the case and developments over the next few years.

Surprisingly, this litigation has not been disclosed in Intuitive's SEC filings as a risk factor despite the potentially significant ramifications an adverse ruling could ultimately have for the company – including a worst case scenario where an adverse ruling could conceivably result in significant monetary damages owed.

Source: PACER.gov, Deutsche Bank estimates

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Due diligence: feedback from da Vinci surgeons



Surgeon #1 (urologist)

- His hospital (part of a large academic institution) been using repaired da Vinci instruments supplied by Restore Robotics for 7-8 months in a portion of cases on the Si system.
- Initial decision to begin use at this center was spearheaded jointly by clinicians and supply chain personnel.
- Clinical experience to date has been positive, with no reports of device malfunction or adverse events.
- Third-party suppliers have been reliable, with no issues to date
- Repaired instruments being used here are mainly needle drivers and scissors, which are among the most widely utilized devices and therefore offer the biggest cost savings potential
- Surgeons nor hospital administration have gotten any real blowback from Intuitive for engagement with third-party suppliers
- Given positive overall initial experience, he expects usage of repaired instruments to broaden over time – particularly once repaired Xi instruments become commercially available

Due diligence: feedback from da Vinci surgeons (2)



Surgeon #2 (general surgeon)

- His center (suburban for-profit hospital) began usage of repaired instruments late last year.
- Initial decision to begin use at this center was spearheaded by the hospital's purchasing team, motivated by continued efforts to lower operating costs for its robotics program that currently houses two da Vinci systems.
- Legal due diligence was a big part of the hospital's vetting process prior to the decision to begin usage of repaired instruments.
- Despite his financial relationship with Intuitive (mainly paid lectures), he has not experienced any significant pushback from Intuitive to date.
- Clinical experience has been satisfactory, with no reports of device malfunction or adverse events.
- While repaired instruments currently account for a very small mix of total consumable units at his hospital, given the favorable initial experience usage will likely increase over time particularly once third-party suppliers broaden their offerings to include Xi devices.

Due diligence: feedback from da Vinci surgeons (3)



Surgeon #3 (general surgeon)

- His center (one of seven hospitals in a for-profit system) began usage of repaired instruments late last year.
- Idea of using repaired instruments was actually first presented to administration by a surgeon colleague rather than administration.
- Usage of repaired instruments is still very low due to the decision to initially have a six-month trial phase for risk management purposes.
- Surgeon noted that the hospital has had no cases of device malfunction or adverse events, and based on this favorable trial phase experience usage is likely to expand over the next year or two.
- His usage is exclusively on Si, though the hospital system broadly houses several Xi robots and he suspects usage across the network broadly could expand to Xi devices but could not speak to this point authoritatively.

Due diligence: feedback from hospital supply chain executives



Supply chain manager #1

- Oversees purchasing for a nine-hospital network in the Northeast.
- Per C-suite mandate, cost reductions across the board have been an increased focus since 2019 and robotics is among the major areas under scrutiny
- Has been engaged in negotiations with third-party providers (both a distributor and also Restore Robotics) for several months.
- Noted that his team's financial analysis points to "fairly substantial" operating cost savings opportunity with usage of repaired instruments
- Legal considerations were cited as a key factor giving pause for some in senior management.
- With his team now nearing completion of its due diligence, a final decision is expected imminently – with usage of repaired instruments across the hospital network potentially starting later this year.

Due diligence: feedback from hospital supply chain executives (2)



Supply chain manager #2

- SVP of purchasing for a major hospital network comprising 28 hospitals across several states.
- Around two dozen da Vinci systems (a majority of which are still Si) housed across the system.
- Has been engaged with third-party providers (both a distributor and also Restore Robotics) since last summer.
- Noted that his team's financial analysis points to "fairly substantial" operating cost savings opportunity with usage of repaired instruments per year with adoption across the hospital network.
- With his team now nearing completion of its thorough due diligence process (financial, legal, clinical, etc.), a final decision is expected by mid-year – with usage of repaired instruments across the hospital network potentially beginning later this year and more earnestly in 2021.

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Quantifying the Risk to US I&A Revenues



To quantify Intuitive's revenues at risk from inroads by third-party instrument repairs, we queried the DB US Medtech Database which provided us with a meaningful sample size: 8.2% of 2019 reported US I&A segment revenues.

We looked at 2019 revenues for all instrument SKUs currently eligible for third-party repair – which, as noted, are currently limited to the da Vinci S/Si product portfolio.

SKU	Description	% of I&A revenue	SKU	Description	% of I&A revenue
420179	SCISSORS MONOPOLAR STERILE DISPOSABLE 38- D CURVE L55.9 CM L1.3 CM OD8 MM	6.71%	420001	SCISSORS LAPAROSCOPIC POTTS 22- D L54.5 CM L1.1 CM	0.04%
420006	DRIVER NEEDLE ENDOWRIST DA VINCI S/SI 30- D LARGE L54.4 CM L1 CM OD8 MM	3.12%	420048	FORCEPS DA VINCI S/SI LONG OD8 MM STERILE	0.04%
420205	FORCEPS BIPOLAR LAPAROSCOPIC ENDOWRIST S/SI 45- D MEDIUM L55.9 CM L2.1 CM OD8 MM	2.98%	420278	RETRACTOR LAPAROSCOPIC GRAPTOR 60- D L56.7 CM L5.4 CM OD8 MM	0.04%
420093	FORCEPS LAPAROSCOPIC PROGRASP S/SI 38- D L56.2 CM L2.8 CM OD8 MM GRASPER	2.21%	420033	FORCEPS LAPAROSCOPIC DA VINCI S/SI ENDOWRIST 30- D MICRO DIAMOND L54.4 CM L1 CM OD8 MM	0.03%
420309	DRIVER NEEDLE SUTURECUT ROBOTIC 23- D MEGA L49.7 CM L1.4 CM OD8 MM	1.97%	420007	SCISSORS LAPAROSCOPIC DA VINCI S/SI ROUND L54.5 CM L1.1 CM OD8 MM	0.02%
420172	FORCEPS MARYLAND BIPOLAR 2 CMX8 MM MED	1.41%	420178	SCISSORS LAPAROSCOPIC CURVE STERILE DISPOSABLE L54.7 CM L1.3 CM OD8 MM MEDIUM	0.02%
420227	BIPOLAR FORCEPS LAPAROSCOPIC S/SI ENDOWRIST PK 70- D L55.4 CM L2 CM OD8 MM	1.32%	420249	RETRACTOR LAPAROSCOPIC 2 BLADE	0.01%
420194	DRIVER NEEDLE MEGA 30-DX54.7CMX1.3CM	1.27%	420181	FORCEPS GRASPING DISPOSABLE RESANO 30- D MEDIUM L54.5 CM L1.1 CM OD8 MM	0.01%
420049	FORCEPS LAPAROSCOPIC 38 D L32.77 CM L2 CM OD8 MM	0.69%	420246	RETRACTOR LAPAROSCOPIC RIGHT CURVE OD8 MM	0.01%
420183	HOOK DA VINCI S/SI L55.2 CM L1.6 CM OD8 MM	0.36%	420036	FORCEPS LAPAROSCOPIC DAVINCI 30-D MEDIUM L54.6 CM L1.2 CM OD8 MM	0.01%
420296	DRIVER NEEDLE SUTURECUT 30- D 54.5 CM X1.1 CMX8 MM LRG	0.28%	420157	BLADE ENDOSCOPIC 8 MM L54.6 CM L1.2 CM OD8 MM	0.01%
420190	GRASPER ENDOSCOPIC DA VINCI S 60- D COBRA L55.4 CM L2 CM OD8 MM LOW FORCE	0.22%	420171	FORCEPS LAPAROSCOPIC 45- D MICRO L55.2 CM L1.4 CM STERILE	0.01%
420207	FORCEPS LAPAROSCOPIC TENACULUM 75- D L56.4 CM L3 CM OD8 MM	0.16%	420215	FORCEPS GRASPER CARDIAC PROBE DAVINCI S/S OD8 MM	0.00%
420184	ELECTRODE CAUTERY SPATULA MONOPOLAR STERILE DISPOSABLE L1.7 CM OD8 MM	0.11%	420121	FORCEPS FINE TISSUE 54.5 CMX8 MM	0.00%
420189	GRASPER LAPAROSCOPIC DA VINCI S/SI ENDOWRIST L56.7 CM OD8 MM	0.08%	420110	FORCEPS LAPAROSCOPIC PRECISE BIPOLAR OD8 MM	0.00%
420318	RETRACTOR ENDOSCOPIC ENDOWRIST DA VINCI S/SI GRAPTOR SMALL GRASP	0.07%	420192	Valve Hook	0.00%
420003	APPLIER CLIP SMALL HEMOCLIP TITANIUM 8 MM	0.05%	420203	Pericardial Dissector	0.00%
420344	DISSECTOR BIPOLAR CURVE CAUTERY 8 MM	0.04%	420204	Atrial Retractor	0.00%

In total, we estimate that ~23% of Intuitive's US I&A segment revenues are exposed to potential impact from third-party repair.

- This represents a big decline versus 2018, when these consumable devices accounted to about 35% of segment sales mix, reflecting the continued mix shift toward X/Xi products.

Source: Global Healthcare Exchange LLC, Deutsche Bank estimates

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Quantifying the Risk to US I&A Revenues



It is our understanding that da Vinci instrument repairs are expected to become available for instruments in the X/Xi product suite around mid-2020 – which is significant given the continued mix shift toward the latest-generation instruments and away from the S/Si catalog.

And while it is not yet clear specifically which X/Xi instrument SKUs will be available for third-party repair, our analysis assumes that these will include the corresponding iteration of those currently being serviced within the prior-generation S/Si family.

SKU	Description	% of I&A revenue	SKU	Description	% of I&A revenue
470179	SCISSORS MONOPOLAR HOT SHEARS ENDOWRIST 38 D CURVE L31.75 CM L1.3 CM OD8 MM	14.01%	470033	FORCEPS LAPAROSCOPIC L1 CM L31.5 CM	0.06%
470006	DRIVER NEEDLE ENDOWRIST 30 D LARGE L31.5 CM L1 CM OD8 MM	4.97%	470249	RETRACTOR LAPAROSCOPIC 70 D L33.27 CM L4.8 CM OD8 MM 2	0.06%
470309	DRIVER NEEDLE MEGA SUTURE CUT 0-35 D L1.4 CM	4.82%	470246	RETRACTOR LAPAROSCOPIC 60 D SHORT L33.27 CM L4.8 CM OD8 MM	0.04%
470172	FORCEPS LAPAROSCOPIC MARYLAND 45 D L32.77 CM L2 CM OD8 MM	2.97%	470171	FORCEPS BIPOLAR MICRO	0.04%
470049	FORCEPS LAPAROSCOPIC CADIERE DA VINCI XI 38 D L32.77 CM L2 CM OD8 MM	2.81%	470215	GRASPER DA VINCI XI 60 D L32.26 CM L1.7 CM OD8 MM	0.03%
470194	DRIVER NEEDLE 38 D L31.75 CM L1.3 CM OD8 MM	1.79%	470181	FORCEPS ENDOWRIST L31.75 CM L1.1 CM OD8 MM	0.02%
470296	DRIVER NEEDLE SUTURECUT 38 D 31.50 CMX1.1 CMX8 MM LRG	1.28%	470190	GRASPER LAPAROSCOPIC COBRA 68 D L32.51 CM L2 CM	0.00%
470318	RETRACTOR LAPAROSCOPIC 0-65 D SMALL L4.5 CM	0.76%	470036	FORCEP ROBOTIC XI DEBAKEY	0.00%
470205	FORCEPS BIPOLAR LAPAROSCOPIC 45 D L32.77 CM L2.1 CM	0.42%	470093	FORCEP ROBOT DAVINCI XI PROGRASP	0.00%
470344	DISSECTOR LAPAROSCOPIC 45 D	0.41%	470183	ROBOT DAVINCI XI PERMANENT MONOPOLAR CAUTERY HOOK	0.00%
470001	SCISSORS POTTS LAPAROSCOPIC 22 D L31.5 CM L1.1 CM OD8 MM	0.15%	470184-T	PERMANENT CAUTERY SPATULA	0.00%
470007	SCISSORS ROUND TIP 38 D L31.5 CM L1.1 CM	0.14%	470207	FCP TENACULUM XI	0.00%
470048	FORCEPS LAPAROSCOPIC 30 D L32.51 CM L2 CM	0.11%			

We estimate that the above X/Xi instruments collectively accounted for ~35% of 2019 US I&A segment revenues. As such, once third-party repairs of them become available, Intuitive's top line exposure will increase dramatically – rendering a majority (~58%) of segment sales “at risk” of competitive pressures.

	2018	2019
S/Si instruments	35%	23%
X/Si instruments	29%	35%
Total	64%	58%

Source: Global Healthcare Exchange LLC, Deutsche Bank estimates

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Model Ramifications: Revenue & EPS Sensitivity



Our analysis of expected financial impact of third-party instrument repair encroachment presumes 58% of US I&A segment sales are addressable in 2021, per SKU-level analysis.

Based on 2021 consensus US I&A segment revenues of \$2.224 billion, this would put \$1.290 billion of Intuitive's sales at risk from increased utilization of repaired instruments. This equates to 23% of total company sales.

Based on our conversations with surgeon and hospital customers, we believe 4-6% penetration of Intuitive's *de novo* instruments on a unit basis in 2021 is reasonable and potentially even conservative. And even with this modest unit share capture, the resultant impact to Intuitive's top-line would be amplified given that each instrument can be repaired multiple times.

As such, our base case scenario of 5% *de novo* unit share capture in 2021 and the assumption that each instrument is repaired 3x on average, our analysis indicates a top-line hit on the order of \$193 million or 3.4% of total company sales in 2021.

The model impact of this manifests on the US revenue per procedure line of our sales build, with zero impact to procedure volume growth.

2021E Consensus (\$MM)

Total company sales	\$5,710
US Instruments & Accessories sales	\$2,224
% of US I&A segment revenues at risk	58%
\$ at risk	\$1,290
% of total company revenues at risk	23%

% capture of addressable revs	Top line impact			EPS impact	
	\$MM	% of US I&A sales	% of total sales	\$	%
2.5%	\$32	1.5%	0.6%	\$0.09	0.6%
5.0%	\$64	2.9%	1.1%	\$0.18	1.1%
7.5%	\$97	4.4%	1.7%	\$0.27	1.7%
10.0%	\$129	5.8%	2.3%	\$0.35	2.2%
12.5%	\$161	7.3%	2.8%	\$0.44	2.8%
15.0%	\$193	8.7%	3.4%	\$0.53	3.4%
17.5%	\$226	10.2%	4.0%	\$0.62	3.9%
20.0%	\$258	11.6%	4.5%	\$0.71	4.5%
22.5%	\$290	13.1%	5.1%	\$0.80	5.0%
25.0%	\$322	14.5%	5.6%	\$0.88	5.6%
27.5%	\$355	16.0%	6.2%	\$0.97	6.2%

Source: Bloomberg Finance LC, Deutsche Bank estimates

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Appendix 1

Important Disclosures

*Other information available upon request

Disclosure checklist			
Company	Ticker	Recent price*	Disclosure
Intuitive Surgical	ISRG.OQ	589.2 (USD) 24 Jan 2020	2, 8, 14, 15

*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <https://research.db.com/Research/Disclosures/CompanySearch>. Aside from within this report, important risk and conflict disclosures can also be found at <https://research.db.com/Research/Topics/Equities?topicId=RB0002>. Investors are strongly encouraged to review this information before investing.

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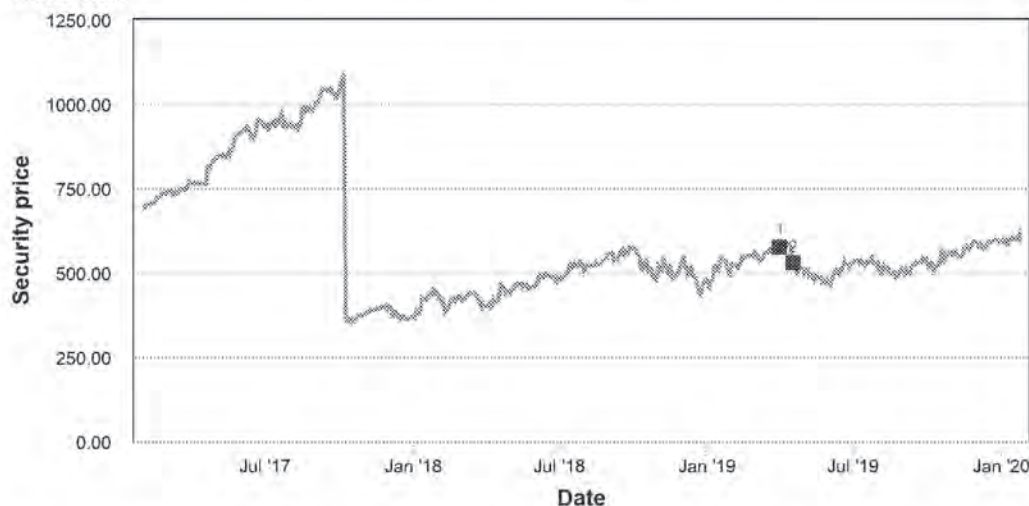
Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s) about the subject issuer and the securities of the issuer. In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Imron Zafar.

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Intuitive Surgical



Historical recommendations and target price: Intuitive Surgical (ISRG.OQ)
(as of 01/24/2020)



Current Recommendations

Buy
Hold
Sell
Not Rated
Suspended Rating

** Analyst is no longer at Deutsche Bank

1. 04/02/2019 Buy, Target Price Change USD 630.00 Imron Zafar

2. 04/19/2019 Buy, Target Price Change USD 610.00 Imron Zafar

Equity Rating Key

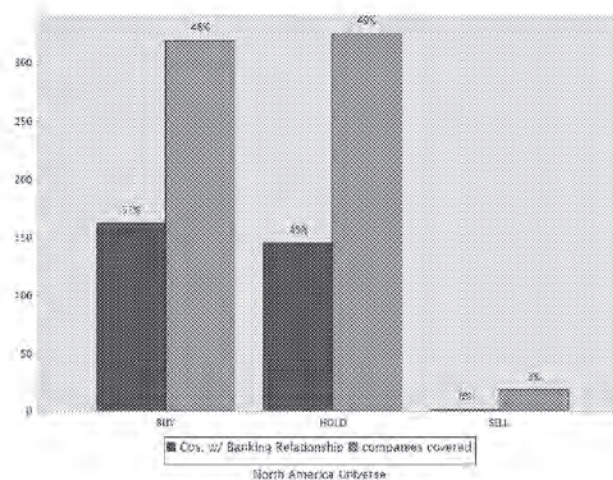
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EXHIBIT 2

to

**PAUL D. BRACHMAN DECLARATION IN SUPPORT OF
DEFENDANT'S MOTION IN LIMINE NO. 2
TO EXCLUDE DEUTSCHE BANK ANALYST REPORTS
AND RELATED TESTIMONY**

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Research



Rating
Hold

North America
United States

Health Care
Medical Supplies &
Devices

Company
Intuitive Surgical

Reuters ISRG.OQ Bloomberg ISRG US Exchange NMS Ticker ISRG

Date
20 February 2020

Company Update

Price at 19 Feb 2020 (USD)	614.88
Price Target	595.00
52-week range	615.00 - 458.27

Deeper Dive on Third Party Risk to I&A Segment

Our February 3rd downgrade was predicated on our belief that refurbished da Vinci instruments pose a material (and increasing) risk to Intuitive's I&A segment growth over the next couple years. Not surprisingly, pushback has centered largely around two points:

1. the presumed regulatory barriers and the view that third-parties engaged in instrument repair are in violation of FDA regulations;
2. hospitals engaging with these third parties are doing so in violation of their customer supply/service contracts with Intuitive.

Deeper dive into the threat from refurbished da Vinci instruments. Over the past few weeks, we consulted with five regulatory and legal experts to gain further clarity on both the regulatory/FDA and service contract angles.

- On the FDA side, while some acknowledged that applicable regulations are somewhat nebulous, a majority of regulatory experts came to the conclusion that Restore Robotics is not in violation of FDA rules as a third-party service provider of refurbished instruments.
- Conversations with both health systems and surgeons since our downgrade have yielded further confirmation that utilization of refurbished robotic instruments is starting to gain traction.
- Intuitive customers also provided additional insights into ISRG's stance and pushback strategy – and importantly, also how hospitals are responding to Intuitive's advisement to cease and desist engagement with service providers.
- Notably, some hospitals are now beginning to push back on restrictions embedded in their service contracts against third party servicing of da Vinci systems and instruments, questioning the legality and enforceability of such terms of service.

We believe the Street continues to be overly dismissive of the risk of increasing usage of refurbished da Vinci instruments to Intuitive's top line over the next couple years. Given the abundance of first-hand confirmation from hospital customers that are exploring refurbished instruments, the question is not whether – but rather, how much – Intuitive's business will be impacted.

Valuation & Risks

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Even with modest unit share capture, revenue hit would be meaningful. We continue to believe 4-6% penetration of Intuitive's *de novo* instruments on a unit basis in 2021 is reasonable and, based on our additional diligence, potentially conservative. And even with this modest unit share capture, the resultant impact to Intuitive's top-line would be amplified given that each instrument can be repaired multiple times. In our base case scenario of 5% *de novo* unit share capture in 2021 and the assumption that each instrument is repaired 3x on average, our analysis indicates a top-line hit on the order of \$193 million or 3.4% of total company sales in 2021.



Bottom line: barriers to entry may not be as strong as presumed

FDA experts concur that FDA action to stymie usage of repaired instruments is highly unlikely.

- Contrary to the viewpoint that third parties require 510(k), our takeaway from these consultants is that 510(k) clearance does not seem to be required for independent service organizations refurbishing used da Vinci instruments so long as they are returned to that same hospital and not re-sold to other centers.
- Regardless, all experts agreed that any regulatory action/enforcement is highly unlikely given FDA's clear comfort around the safety of refurbished devices broadly and the fact that there has been no signal of incremental patient risk to date with repaired da Vinci instruments.
- In fact, Intuitive acknowledged in a recent cease and desist notice to a hospital customer that "FDA has indicated that it will exercise a certain degree of enforcement discretion from FDA quality system requirements as they apply to third party service providers and refurbishers."

Contractual terms of agreement may not be an airtight impediment to hospital adoption.

- As has always been the case, Intuitive's hospital customer contracts include stipulations prohibiting engagement with third parties for servicing of both da Vinci systems and instruments/accessories, and that violation of these clauses could render supply/service contracts null and void
- **However, our work indicates that some hospitals are beginning to push back on these contractual limitations and questioning their legal voracity and enforceability. We have heard firsthand from customers, including large hospital systems, planning to (or considering) pursue legal action against Intuitive within the next 12 months.**

Net-net. We have a high level of evidence-based conviction that repaired da Vinci instruments are beginning to gain traction among hospitals, with usage likely to continue to expand over the next couple years. We note two potentially meaningful near-term stimulants of increased adoption:

- (1) significantly greater commercial distribution (Medline, a major distributor with substantial sales/marketing/distribution footprint, recently became a distributor for Restore Robotics)
- (2) expansion of offerings to include repaired X/Xi instruments expected near-term.

Why printer cartridges could be highly relevant



We highlight later in this note the specific terms of agreement enumerated in Intuitive's customer contracts that hospitals are now starting to question, largely on the basis of a precedent legal case - IMPRESSION PRODUCTS, INC. v. LEXMARK INTERNATIONAL, INC. – that legal consultants think could ultimately have huge implications for Intuitive's entire business model

The US Supreme Court issued a ruling on this remarkably analogous case in 2017, with Justice Roberts writing:

“We conclude that a patentee’s decision to sell a product exhausts all of its patent rights in that item, regardless of any restrictions the patentee purports to impose or the location of the sale. In sum, patent exhaustion is uniform and automatic. Once a patentee decides to sell—whether on its own or through a licensee—that sale exhausts its patent rights, regardless of any post-sale restrictions the patentee purports to impose, either directly or through a license.

Some hospitals we spoke with believe Intuitive's contract terms could be in violation of this USSC ruling in the Lexmark case, thus rendering them invalid and unenforceable.

Litigation acknowledged as risk factor in latest 10K filing. Regarding the antitrust lawsuit filed by Restore Robotics in February 2019 (and countersuit subsequently filed by Intuitive), Intuitive has now acknowledged the litigation as a shareholder risk factor in its 10K filed two weeks ago.

Source: PACER.gov, company filings, Deutsche Bank

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Research

Clarity Around Key Regulatory Considerations



Insights from four regulatory consultants with experience and expertise specifically in the arena of third party servicing medical devices:

- Former staffer within the CDRH division of FDA;
- Regulatory expert who has worked with various medtech companies in managing hundreds of 510(k) and PMA submissions over decades of industry experience;
- Two regulatory affairs personnel at large medtech companies with significant presence in device refurbishing/reprocessing.

These consultations provided a lot more clarity around a number of critical points determining the regulatory parameters these serviced instruments are subject to, such as

- Distinction between servicing and marketing of limited-use devices by third parties like Restore Robotics versus single use devices;
- Refurbishing versus remanufacturing and the significant differences in regulatory oversight of one versus the other;
- Sterilization processes, which is closely scrutinized by FDA;
- Regulatory oversight of third party facilities where used instruments are serviced.

Our takeaway from speaking with these consultants is that 510(k) clearance clearly is not be required for independent service organizations (ISOs) such as Restore Robotics in repairing used limited-use da Vinci instruments for hospitals and returning them to the hospital for continued usage.

Servicing versus Remanufacturing: a key distinction



The critical distinction is the categorization of used instruments serviced by third parties for additional use given the significant implications vis-à-vis regulatory oversight. The FDA defines “service” and “remanufacture” as follows:

- **Service:** “Repair and/or preventative or routine maintenance of one or more parts in a finished device, after distribution, for purposes of returning it to the safety and performance specifications established by the OEM and to meet its original intended use. Servicing excludes activities that change the intended use of the device from its original purpose, or change the safety or performance specifications. However, it is important to note that FDA considers remanufacturing to be a distinct activity from servicing that raises different concerns, and is thus regulated differently. FDA considers servicing to include refurbishing, reconditioning, rebuilding, repairing, and remarketing, but not remanufacturing.”
- **Remanufacture:** Process, condition, renovate, repackage, restore, or any other act done to a finished device that significantly changes the finished device’s performance or safety specifications, or intended use.

We believe da Vinci instruments currently refurbished by Restore Robotics clearly fall under the definition of “service” as the process these used instruments undergo are intended to return them to “the safety and performance specifications established by the OEM and to meet its original intended use” and do not involve “activities that change the intended use.”

Importantly, the serviced instruments are always shipped back to the original hospital (i.e. no reselling) and the instruments are shipped back to the hospital only after verification that there has been no deviation from the original “performance or safety specifications.”

Simply put, surgical scissors have been serviced by ISOs for decades. So why should scissors affixed to a robotic arm be structurally different? It is important to keep in mind that repaired instruments are limited to relatively simple devices like scissors and graspers and not advanced instruments like staplers.

Source: FDA.gov

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Research



Servicing versus Remanufacturing: a key distinction

FDA consultant underscored that ownership is a key determinant of regulatory requirements and FDA oversight broadly.

- When a hospital purchases an instrument from Intuitive, the hospital takes ownership of the device
- So when the hospital sends the instrument to a third party like Restore Robotics for refurbishment, the third party is acting as a contractor providing a service for the hospital
- That is, ownership of the device never actually changes hands.

Another FDA expert we consulted fully concurred, noting that once an instrument is purchased it becomes property of the hospital which is free to “do whatever it wants with it.”

- The consultants did however point out that the instrument’s warranty from the manufacturer would expire after the 10x uses and the hospital/third party would thereby assume liability.
- In speaking with Restore and Medline, neither disagreed with this point and pointed out that standard insurance policies are in place in acknowledgement of this assumed liability. Medline pointed out that the cost to warranty these type of instruments is fairly immaterial

All of our consultants emphasized that a used instrument that is sent to a third party for repair must be shipped back only to that same hospital such that there is no change in ownership. We confirmed with both hospitals and Restore that such is indeed the case here.

510(k) Premarket Notification does not appear applicable



The immediate feedback to our downgrade note was that Restore Robotics is subject to 510(k) approval requirement, and that because the company does not have 510(k) clearance it is therefore in clear violation of FDA regulations.

However, most of our regulatory experts we spoke to suggested that this argument is fundamentally misplaced.

One consultant noted that the non-applicability of 510(k) approval is made quite clear by simply considering the FDA's official definition of this process:

510(k) Premarket Notification

● FDA Home ● Medical Devices ● Databases

A 510(K) is a premarket submission made to FDA to demonstrate that the device to be marketed is at least as safe and effective, that is, substantially equivalent, to a legally marketed device (21 CFR §807.92(a)(3)) that is not subject to premarket approval.

The agency's definition explicitly qualifies application of 510(k) standards to devices intended to be marketed.

Because third parties are providing a service to the hospital and not commercially marketing the repaired instruments, by definition this precludes the obligation of having 510(k) clearance.

Source: FDA.gov

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Sterilization processes are highly regulated by FDA



FDA expert pushback

- One consultant believed Restore Robotics would need to have 510(k) clearance because these limited use instruments are required to undergo a cleaning and sterilization process prior to initial use and between all subsequent uses, per the 510(k) clearance from the FDA.
- Because sterilization processes are highly scrutinized by the FDA due to potential public safety risk, she raised the possibility that 510(k) might thus be necessary.
- For example, all single use refurbished equipment that is sterilized REQUIRE 510k approval
- However, post that expert call, we confirmed that the instrument repair process actually does NOT involve sterilization – thus rendering this point moot.
- When the repaired instrument is returned to the hospital, it remains subject to exactly the same cleaning/sterilization requirements outlined in the IFU.

In other words, there is no disruption to the IFU approved by the FDA as part of the 510(k) clearance vis-à-vis sterilization protocol from the repair of da Vinci instruments.

Regulatory oversight of facilities: ISO certification is the standard



Companies engaged in servicing of devices for the hospital operate under ISO certification, which are obtained from third parties that inspect all facets of the facility where these repairs happen. This inspection includes quality control to confirm that the repair process restores the device to specifications in line with product labeling and with no changes to intended use or safety profile. As noted earlier, FDA makes a clear distinction between remanufactured versus serviced devices in terms of regulatory oversight including facilities.

Facilities where third parties service and refurbish instruments are not subject to FDA oversight. Essentially, these facilities need to operate to the satisfaction of hospitals, and having ISO certification is largely what the vetting process of hospitals centers around.

We were able to review a third party ISO certification received by Restore Robotics for the servicing of endowrist instruments. We confirmed that the issuer of this certification, a Germany-based company called DQS MED, is reputable and credible in the medtech industry – e.g., just a few months ago, this same organization granted ISO certification to a Medtronic facility.

Net-net: (1) FDA consultants agree that 510k clearance clearly appears to be not applicable, (2) regardless, given the lack of any signal of incremental patient risk with repaired instruments, any FDA enforcement action to curtail usage is highly unlikely unless the restored equipment causes patient harm.

Specifically, Restore has been engaged in refurbishing Intuitives' products for over 18 months. Its safe to believe that Intuitive has brought this to FDA's attention. Per our consultants, if the FDA doesn't act on this information within 3-6 months, it is unlikely the FDA ever will.

Source: FDA.gov, Deutsche Bank estimates

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FDA's general comfort around refurbished devices is quite clear...and Intuitive agrees that enforcement activity by FDA is unlikely

- Third-party servicing of medical devices has been widespread across the industry for many years, including large segments like endoscopes and laparoscopic devices;
- Third parties engaged in this practice are closely regulated and, per figures cited by the FDA, there are close to 20K companies just in the US that are in the business of servicing used medical devices;
- **FDA's stance on third-party servicing of medical devices is clear.** In May 2018, the agency published its views in its report, *FDA Report on the Quality, Safety, and Effectiveness of Servicing of Medical Devices*

The document states that there insufficient basis to “justify imposing additional/different, burdensome regulatory requirements at this time; rather, the objective evidence indicates that many OEMs and third-party entities provide high quality, safe, and effective servicing of medical devices.”

Net/net, FDA posits that “The continued availability of third party entities to service and repair medical devices is critical to the functioning of the U.S. healthcare system.”

Intuitive acknowledges that regulatory enforcement actions of third party service providers broadly are unlikely, noting in a written correspondence to a hospital customer that FDA will likely “exercise a certain degree of enforcement discretion from FDA quality system requirements as they apply to third party service providers and refurbishers.”

Source: FDA.gov, Deutsche Bank estimates

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Additional insights into Intuitive's stance and points of pushback



In cease-and-desist letters sent to hospitals that have begun (or could soon begin) using refurbished da Vinci instruments, Intuitive justifies its stance on safety, regulatory, and legal/contractual grounds.

➤ **Safety**

- Some of the specific points made by the company regarding risks around servicing of limited-use robot consumables do not seem to be relevant.
- For example, one area of emphasis for Intuitive is sterilization and the significant safety risks deviations from sterilization protocols that were okayed by FDA as part of 510(k) device approval.
- However, the repair processes that these instruments undergo do not actually involve sterilization, and the sterilization process these devices are required to undergo between uses remains exactly the same once the instrument is refurbished.
- In other words, the repaired instrument is sent back must undergo the same pre-operative steps as a de novo instrument shipped from Intuitive prior to the initial use.

➤ **Regulatory considerations.**

- Intuitive cautions customers that third party repairs of da Vinci instruments are in violation of FDA regulations and specific IFUs included in each device's 510(k) approval.
- However, our work suggests that there is likely no actual violation of regulatory guidelines by third parties in refurbishing the devices nor by the hospital in utilizing them.

➤ **Legal / Contractual grounds**

- Customer contracts explicitly prohibit third party servicing of instruments/robots and that violations could render the contract null and void. Hospitals are now beginning to question Intuitive's ability to enforce this.



Hospitals starting to pushback on legality/enforceability of terms of service

In no uncertain terms, the standard terms of service outlined in customer contracts state that hospitals are precluded from engaging with third parties as well as the potential consequences of violation – nullification of contracts, product warranties, etc.

- *Instruments and Accessories are subject to a limited license to use those Instruments and Accessories with, and prepare those Instruments and Accessories for use with, the System. Any other use is prohibited, whether before or after the Instrument or Accessory's license expiration, including repair, refurbishment, or reconditioning not approved by Intuitive, and cleaning and sterilization inconsistent with Documentation. This license expires once an Instrument or Accessory is used up to its maximum number of uses specified in the Documentation accompanying the Instrument or Accessory.*
- *Customer agreed that it will not, nor will Customer permit any third party to, modify, disassemble, reverse engineer, alter, or misuse the System or Instruments and Accessories. Customer further agreed that if Customer fails to comply with the requirements listed above, Intuitive may terminate the Agreement immediately upon written notice, and any warranties applicable to the System will become void.*

Source: Intuitive Surgical, industry contacts

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Hospitals starting to pushback on legality/enforceability of terms of service

What has changed? While restrictions around third party servicing of da Vinci instruments and robots have always been a standard part of customer contracts, we have learned that hospitals are now starting to push back on these clauses.

1. Usage of repaired instruments was simply not an option previously. Hence, there was no pushback from hospitals – but with this option now available from third parties like Restore Robotics, we are starting to see hospitals question the actual legality of these terms.
2. Recent Supreme Court ruling in the IMPRESSION PRODUCTS, INC. v. LEXMARK INTERNATIONAL, INC. case. As highlighted below, the aforementioned terms of agreement stipulated in Intuitive's service contracts could potentially be in conflict with the SCOTUS opinions articulated in this decision.

SCOTUS docket No 15-1189: Why printer cartridges could be highly relevant



SUPREME COURT OF THE UNITED STATES

Syllabus

IMPRESSION PRODUCTS, INC. v. LEXMARK
INTERNATIONAL, INC.

CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR
THE FEDERAL CIRCUIT

No. 15–1189. Argued March 21, 2017—Decided May 30, 2017

This landmark case is highly analogous to the customer restrictions stipulated in the terms of service of Intuitive’s customer contracts.

When Lexmark sells toner cartridges, it gives consumers two options: One option is to buy a toner cartridge at full price, with no restrictions. The other option is to buy a cartridge at a discount through Lexmark’s “Return Program.” In exchange for the lower price, customers who buy through the Return Program must sign a contract agreeing to use the cartridge only once and to refrain from transferring the cartridge to anyone but Lexmark.

Companies known as remanufacturers acquire empty Lexmark toner cartridges—including Return Program cartridges—from purchasers in the United States, refill them with toner, and then resell them. They do the same with Lexmark cartridges that they acquire from purchasers overseas and import into the United States. Lexmark sued a number of these remanufacturers, including petitioner Impression Products, Inc., for patent infringement with respect to two groups of cartridges.

Source: PACER.gov, Deutsche Bank estimates

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SCOTUS docket No 15-1189: Why printer cartridges could be highly relevant



The US Supreme Court found the stipulations imposed by Lexmark on its customers restricting what these customers do with printer cartridges they have purchased to be unlawful

- *When a patentee sells one of its products, the patentee can no longer control that item through the patent laws—its patent rights are said to “exhaust.”*
- *The purchaser and all subsequent owners are free to use or resell the product just like any other item of personal property, without fear of an infringement lawsuit.*

This case presents two questions about the scope of the patent exhaustion doctrine:

- *First, whether a patentee that sells an item under an express restriction on the purchaser’s right to reuse or resell the product may enforce that restriction through an infringement lawsuit.*
- *Second, whether a patentee exhausts its patent rights by selling its product outside the United States, where American patent laws do not apply. **We conclude that a patentee’s decision to sell a product exhausts all of its patent rights in that item, regardless of any restrictions the patentee purports to impose or the location of the sale.***

*In sum, patent exhaustion is uniform and automatic. **Once a patentee decides to sell—whether on its own or through a licensee—that sale exhausts its patent rights, regardless of any post-sale restrictions the patentee purports to impose, either directly or through a license.***

Source: PACER.gov, Deutsche Bank estimates

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Research

Quantifying the Risk to US I&A Revenues



To quantify Intuitive's revenues at risk from inroads by third-party instrument repairs, we queried the DB US Medtech Database which provided us with a meaningful sample size: 8.2% of 2019 reported US I&A segment revenues.

We looked at 2019 revenues for all instrument SKUs currently eligible for third-party repair – which, as noted, are currently limited to the da Vinci S/Si product portfolio.

SKU	Description	% of I&A revenue	SKU	Description	% of I&A revenue
420179	SCISSORS MONOPOLAR STERILE DISPOSABLE 38- D CURVE L55.9 CM L1.3 CM OD8 MM	6.71%	420001	SCISSORS LAPAROSCOPIC POTTS 22- D L54.5 CM L1.1 CM	0.04%
420006	DRIVER NEEDLE ENDOWRIST DA VINCI S/SI 30- D LARGE L54.4 CM L1 CM OD8 MM	3.12%	420048	FORCEPS DA VINCI S/SI LONG OD8 MM STERILE	0.04%
420205	FORCEPS BIPOLAR LAPAROSCOPIC ENDOWRIST S/SI 45- D MEDIUM L55.9 CM L2.1 CM OD8 MM	2.98%	420278	RETRACTOR LAPAROSCOPIC GRAPTOR 60- D L56.7 CM L5.4 CM OD8 MM	0.04%
420093	FORCEPS LAPAROSCOPIC PROGRASP S/SI 38- D L56.2 CM L2.8 CM OD8 MM GRASPER	2.21%	420033	FORCEPS LAPAROSCOPIC DA VINCI S/SI ENDOWRIST 30- D MICRO DIAMOND L54.4 CM L1 CM OD8 MM	0.03%
420309	DRIVER NEEDLE SUTURECUT ROBOTIC 23- D MEGA L49.7 CM L1.4 CM OD8 MM	1.97%	420007	SCISSORS LAPAROSCOPIC DA VINCI S/SI ROUND L54.5 CM L1.1 CM OD8 MM	0.02%
420172	FORCEPS MARYLAND BIPOLAR 2 CMX8 MM MED	1.41%	420178	SCISSORS LAPAROSCOPIC CURVE STERILE DISPOSABLE L54.7 CM L1.3 CM OD8 MM MEDIUM	0.02%
420227	BIPOLAR FORCEPS LAPAROSCOPIC S/SI ENDOWRIST PK 70- D L55.4 CM L2 CM OD8 MM	1.32%	420249	RETRACTOR LAPAROSCOPIC 2 BLADE	0.01%
420194	DRIVER NEEDLE MEGA 30-DX54.7CMX1.3CM	1.27%	420181	FORCEPS GRASPING DISPOSABLE RESANO 30- D MEDIUM L54.5 CM L1.1 CM OD8 MM	0.01%
420049	FORCEPS LAPAROSCOPIC 38 D L32.77 CM L2 CM OD8 MM	0.69%	420246	RETRACTOR LAPAROSCOPIC RIGHT CURVE OD8 MM	0.01%
420183	HOOK DA VINCI S/SI L55.2 CM L1.6 CM OD8 MM	0.36%	420036	FORCEPS LAPAROSCOPIC DAVINCI 30-D MEDIUM L54.6 CM L1.2 CM OD8 MM	0.01%
420296	DRIVER NEEDLE SUTURECUT 30- D 54.5 CM X1.1 CMX8 MM LRG	0.28%	420157	BLADE ENDOSCOPIC 8 MM L54.6 CM L1.2 CM OD8 MM	0.01%
420190	GRASPER ENDOSCOPIC DA VINCI S 60- D COBRA L55.4 CM L2 CM OD8 MM LOW FORCE	0.22%	420171	FORCEPS LAPAROSCOPIC 45- D MICRO L55.2 CM L1.4 CM STERILE	0.01%
420207	FORCEPS LAPAROSCOPIC TENACULUM 75- D L56.4 CM L3 CM OD8 MM	0.16%	420215	FORCEPS GRASPER CARDIAC PROBE DAVINCI S/S OD8 MM	0.00%
420184	ELECTRODE CAUTERY SPATULA MONOPOLAR STERILE DISPOSABLE L1.7 CM OD8 MM	0.11%	420121	FORCEPS FINE TISSUE 54.5 CMX8 MM	0.00%
420189	GRASPER LAPAROSCOPIC DA VINCI S/SI ENDOWRIST L56.7 CM OD8 MM	0.08%	420110	FORCEPS LAPAROSCOPIC PRECISE BIPOLAR OD8 MM	0.00%
420318	RETRACTOR ENDOSCOPIC ENDOWRIST DA VINCI S/SI GRAPTOR SMALL GRASP	0.07%	420192	Valve Hook	0.00%
420003	APPLIER CLIP SMALL HEMOCLIP TITANIUM 8 MM	0.05%	420203	Pericardial Dissector	0.00%
420344	DISSECTOR BIPOLAR CURVE CAUTERY 8 MM	0.04%	420204	Atrial Retractor	0.00%

In total, we estimate that ~23% of Intuitive's US I&A segment revenues are exposed to potential impact from third-party repair.

- This represents a big decline versus 2018, when these consumable devices accounted to about 35% of segment sales mix, reflecting the continued mix shift toward X/Xi products.

Source: Global Healthcare Exchange LLC, Deutsche Bank estimates

Deutsche Bank
Research

Quantifying the Risk to US I&A Revenues



It is our understanding that da Vinci instrument repairs are expected to become available for instruments in the X/Xi product suite around mid-2020 – which is significant given the continued mix shift toward the latest-generation instruments and away from the S/Si catalog.

And while it is not yet clear specifically which X/Xi instrument SKUs will be available for third-party repair, our analysis assumes that these will include the corresponding iteration of those currently being serviced within the prior-generation S/Si family.

SKU	Description	% of I&A revenue	SKU	Description	% of I&A revenue
470179	SCISSORS MONOPOLAR HOT SHEARS ENDOWRIST 38 D CURVE L31.75 CM L1.3 CM OD8 MM	14.01%	470033	FORCEPS LAPAROSCOPIC L1 CM L31.5 CM	0.06%
470006	DRIVER NEEDLE ENDOWRIST 30 D LARGE L31.5 CM L1 CM OD8 MM	4.97%	470249	RETRACTOR LAPAROSCOPIC 70 D L33.27 CM L4.8 CM OD8 MM 2	0.06%
470309	DRIVER NEEDLE MEGA SUTURE CUT 0-35 D L1.4 CM	4.82%	470246	RETRACTOR LAPAROSCOPIC 60 D SHORT L33.27 CM L4.8 CM OD8 MM	0.04%
470172	FORCEPS LAPAROSCOPIC MARYLAND 45 D L32.77 CM L2 CM OD8 MM	2.97%	470171	FORCEPS BIPOLAR MICRO	0.04%
470049	FORCEPS LAPAROSCOPIC CADIERE DA VINCI XI 38 D L32.77 CM L2 CM OD8 MM	2.81%	470215	GRASPER DA VINCI XI 60 D L32.26 CM L1.7 CM OD8 MM	0.03%
470194	DRIVER NEEDLE 38 D L31.75 CM L1.3 CM OD8 MM	1.79%	470181	FORCEPS ENDOWRIST L31.75 CM L1.1 CM OD8 MM	0.02%
470296	DRIVER NEEDLE SUTURECUT 38 D 31.50 CMX1.1 CMX8 MM LRG	1.28%	470190	GRASPER LAPAROSCOPIC COBRA 68 D L32.51 CM L2 CM	0.00%
470318	RETRACTOR LAPAROSCOPIC 0-65 D SMALL L4.5 CM	0.76%	470036	FORCEP ROBOTIC XI DEBAKEY	0.00%
470205	FORCEPS BIPOLAR LAPAROSCOPIC 45 D L32.77 CM L2.1 CM	0.42%	470093	FORCEP ROBOT DAVINCI XI PROGRASP	0.00%
470344	DISSECTOR LAPAROSCOPIC 45 D	0.41%	470183	ROBOT DAVINCI XI PERMANENT MONOPOLAR CAUTERY HOOK	0.00%
470001	SCISSORS POTTS LAPAROSCOPIC 22 D L31.5 CM L1.1 CM OD8 MM	0.15%	470184-T	PERMANENT CAUTERY SPATULA	0.00%
470007	SCISSORS ROUND TIP 38 D L31.5 CM L1.1 CM	0.14%	470207	FCP TENACULUM XI	0.00%
470048	FORCEPS LAPAROSCOPIC 30 D L32.51 CM L2 CM	0.11%			

We estimate that the above X/Xi instruments collectively accounted for ~35% of 2019 US I&A segment revenues. As such, once third-party repairs of them become available, Intuitive’s top line exposure will increase dramatically – rendering a majority (~58%) of segment sales “at risk” of competitive pressures.

	2018	2019
S/Si instruments	35%	23%
X/Si instruments	29%	35%
Total	64%	58%

Source: Global Healthcare Exchange LLC, Deutsche Bank estimates

Model Ramifications: Revenue & EPS Sensitivity



Our analysis of expected financial impact of third-party instrument repair encroachment presumes 58% of US I&A segment sales are addressable in 2021, per SKU-level analysis.

Based on 2021 consensus US I&A segment revenues of \$2.224 billion, this would put \$1.290 billion of Intuitive’s sales at risk from increased utilization of repaired instruments. This equates to 23% of total company sales.

Based on our conversations with surgeon and hospital customers, we believe 4-6% penetration of Intuitive’s *de novo* instruments on a unit basis in 2021 is reasonable and potentially even conservative. And even with this modest unit share capture, the resultant impact to Intuitive’s top-line would be amplified given that each instrument can be repaired multiple times.

As such, our base case scenario of 5% *de novo* unit share capture in 2021 and the assumption that each instrument is repaired 3x on average, our analysis indicates a top-line hit on the order of \$193 million or 3.4% of total company sales in 2021.

The model impact of this manifests on the US revenue per procedure line of our sales build, with zero impact to procedure volume growth.

2021E Consensus (\$MM)	
Total company sales	\$5,710
US Instruments & Accessories sales	\$2,224
% of US I&A segment revenues at risk	58%
\$ at risk	\$1,290
% of total company revenues at risk	23%

% capture of addressable revs	Top line impact			EPS impact	
	\$MM	% of US I&A sales	% of total sales	\$	%
2.5%	\$32	1.5%	0.6%	\$0.09	0.6%
5.0%	\$64	2.9%	1.1%	\$0.18	1.1%
7.5%	\$97	4.4%	1.7%	\$0.27	1.7%
10.0%	\$129	5.8%	2.3%	\$0.35	2.2%
12.5%	\$161	7.3%	2.8%	\$0.44	2.8%
15.0%	\$193	8.7%	3.4%	\$0.53	3.4%
17.5%	\$226	10.2%	4.0%	\$0.62	3.9%
20.0%	\$258	11.6%	4.5%	\$0.71	4.5%
22.5%	\$290	13.1%	5.1%	\$0.80	5.0%
25.0%	\$322	14.5%	5.6%	\$0.88	5.6%
27.5%	\$355	16.0%	6.2%	\$0.97	6.2%

Source: Bloomberg Finance LC, Deutsche Bank estimates

Mitigants to Third-Party Encroachment



Intuitive expects that these matters will ultimately be resolved in the courts, and barring any unforeseen developments (i.e., settlement) the ongoing litigation with Restore Robotics will surely take several years to play out. However, in the meanwhile we do note multiple fundamental mitigating factors that will to some extent continue to blunt the impact.

- **Innovation.** Intuitive's R&D investments remain substantial (\$430mm in 2019) with innovation now an even bigger core focus ahead of upcoming competitor system launches. Launch of new da Vinci platforms and advanced instruments will continue to yield a lower mix of I&A revenues vulnerable to third-party encroachment.
- **Usage based placements.** An increasing number of hospitals are acquiring new da Vinci systems via usage-based and operating lease arrangements, with systems like Mount Sinai beholden to instrument pricing based on volume thresholds and therefore disincentivized to utilize refurbished instruments.
- **Leveraging its dominant market position.** While some hospitals are now starting to question the legality/enforceability of contract terms of service, there are also those whose surgeons are simply unwilling to risk losing access to Intuitive's technologies. We spoke with a supply chain executive of a major academic center that recently began using repaired da Vinci instruments, but upon receipt of an ensuing cease-and-desist notice from the company's lawyers, stopped.

Litigation: Restore Robotics v. Intuitive Surgical



Developments in ongoing litigation will ultimately have significant implications, though resolution likely years away.

- In February 2019, Restore Robotics filed an antitrust lawsuit against Intuitive in the US District Court in the Northern District of Florida.
- Intuitive subsequently filed a countersuit against Restore Robotics comprising six counts that include unlawful business practices and fraud.

The case is currently in discovery phase and a jury trial is scheduled to commence in 2022, which barring settlement and potential for either side to appeal the jury's verdict indicates that resolution is likely several years away. And while we are not lawyers and thus not qualified to opine on the voracity of either party's claims in the lawsuit/countersuit nor handicap the potential outcomes, and despite the fact that final resolution is likely years away, we think investors should be cognizant of the case and developments over the next few years.

We do note that if hospital systems wanted to pursue legal action of their own against Intuitive, it would be via a separate filing in the state the hospitals operate in – and based on our checks, we would not be surprised to see such lawsuits filed over the next year or two.

Source: PACER.gov, Deutsche Bank estimates

Deutsche Bank

Research

20 February 2020
 Medical Supplies & Devices
 Intuitive Surgical



Appendix 1

Important Disclosures

*Other information available upon request

Disclosure checklist			
Company	Ticker	Recent price*	Disclosure
Intuitive Surgical	ISRG.OQ	604.67 (USD) 18 Feb 2020	2, 8, 14, 15

*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <https://research.db.com/Research/Disclosures/CompanySearch>. Aside from within this report, important risk and conflict disclosures can also be found at <https://research.db.com/Research/Topics/Equities?topicId=RB0002>. Investors are strongly encouraged to review this information before investing.

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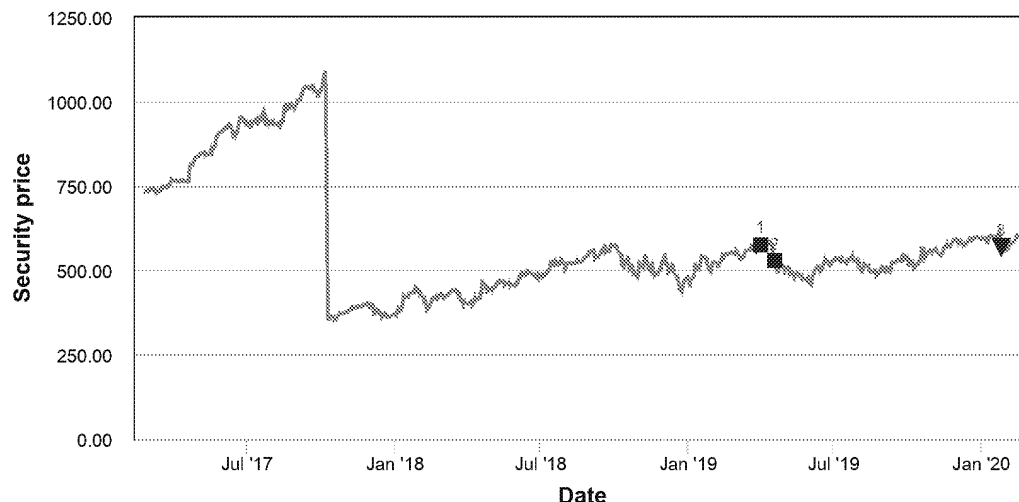
The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s) about the subject issuer and the securities of the issuer. In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Imron Zafar.

20 February 2020
Medical Supplies & Devices
Intuitive Surgical



Historical recommendations and target price: Intuitive Surgical (ISRG.OO)

(as of 02/19/2020)



Current Recommendations

Buy
Hold
Sell
Not Rated
Suspended Rating

** Analyst is no longer at Deutsche Bank

- 04/02/2019 Buy, Target Price Change USD 630.00 Imron Zafar
- 04/19/2019 Buy, Target Price Change USD 610.00 Imron Zafar
- 01/27/2020 Downgraded to Hold, Target Price Change USD 595.00 Imron Zafar

Equity Rating Key

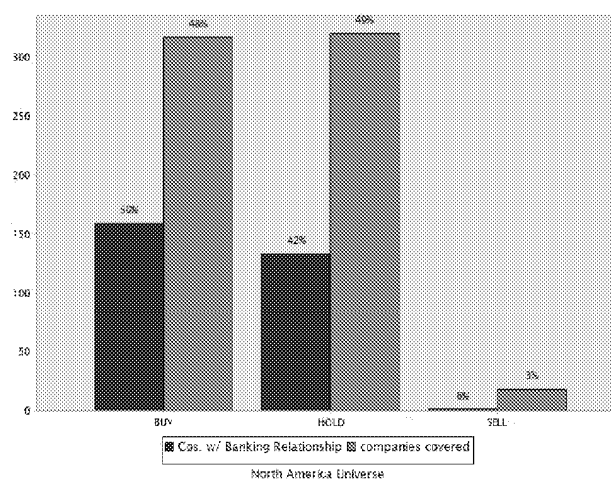
Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus projected dividend yield) , we recommend that investors buy the stock.

Sell: Based on a current 12-month view of total share-holder return, we recommend that investors sell the stock.

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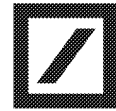
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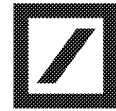
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EXHIBIT 3

to

**PAUL D. BRACHMAN DECLARATION IN SUPPORT OF
DEFENDANT'S MOTION IN LIMINE NO. 2
TO EXCLUDE DEUTSCHE BANK ANALYST REPORTS
AND RELATED TESTIMONY**

ATTACHMENT 54

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA**

HIGHLY CONFIDENTIAL: SUBJECT TO PROTECTIVE ORDER

SURGICAL INSTRUMENT SERVICE
COMPANY, INC.,

Plaintiff,

VS.

INTUITIVE SURGICAL, INC.,

Defendant.

Case No. 5:21-cv-03496.

EXPERT REPORT

Dr. Russell L. Lamb
President

Monument Economics Group, LLC
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Suite 2650
Arlington, VA 22209

December 2, 2022

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I. Introduction and Summary of Conclusions

A. Expert Background and Qualifications

1. I am the President and co-founder of Monument Economics Group (“Monument”), an economic consulting firm based in Arlington, VA. Monument provides economic research and quantitative and statistical analyses to clients in the United States, Canada, and elsewhere internationally. I have studied the economics of markets and prices and have consulted on these issues for over 30 years. I have previously been asked to opine on a variety of economic issues, including the existence of monopolization or cartel behavior in various markets, damages arising from anti-competitive conduct, and class-wide impact arising from alleged price-fixing and anticompetitive conduct as well as class-wide injury arising from allegations of consumer fraud or breach of warranty. A copy of my curriculum vitae, including a list of the matters in which I have submitted expert testimony in the past four years, is attached to this report as Appendix A.

2. I graduated from the University of Tennessee, Knoxville in 1987 (*summa cum laude*, Phi Beta Kappa) as the top graduate in my class in the College of Arts and Sciences. I earned a Master’s degree in economics from the University of Maryland in 1989. I received the Doctor of Philosophy degree in economics from the University of Pennsylvania in 1994. My economic research has been published in peer-reviewed journals such as the *Journal of Econometrics*, *Journal of Development Economics*, *CATO Journal*, *Regulation*, and others. I have also served as a referee for leading economics journals, including the *International Economic Review*, *Journal of Business and Economic Statistics*, *Journal of Labor Economics*, *American Journal of Agricultural Economics*, and *Contemporary Economic Policy*.

3. Prior to co-founding Monument, I held a variety of positions in government, academia, and other consulting firms. From 1994 until 1999, I was an Economist (later Senior Economist) with the Federal Reserve System of the United States in Washington, DC and Kansas City, Missouri. From 1999 until 2004, I taught economics and agricultural economics at North Carolina State University in Raleigh, North Carolina. I have also been hired as an economic consultant to the World Bank and the Government

of Peru, in addition to being retained on a wide range of economic consulting projects in a variety of contexts. Courts in the United States and Canada have accepted my economic analyses of the market as evidence in litigation involving allegations of anticompetitive conduct in a number of cases including, for example, *In re: Domestic Drywall Antitrust Litigation*, *Fond Du Lac Bumper Exchange Inc., et al. v. Jui Li Enterprise Company Ltd. et al.*, *In re: Puerto Rican Cabotage Antitrust Litigation*, *In re: Aftermarket Auto Lighting Products Antitrust Litigation*, *In re: Titanium Dioxide Antitrust Litigation*, *Eugene Allan, et al.* In addition to my consulting activities, I most recently have taught economics at the University of Tennessee, Knoxville, where I am an adjunct faculty member in the Department of Economics in the Haslam College of Business. The hourly rate for my work in this matter is \$750 per hour. Monument's compensation in this matter is not contingent upon the content of my testimony or the outcome of this litigation.

B. Summary of Plaintiffs' Allegations

4. I understand that a Complaint was filed on May 10, 2021 by Surgical Instrument Service Company, Inc. ("SIS" or "Plaintiff") against Intuitive Surgical, Inc. ("Intuitive" or "Defendant").¹ I understand from Counsel for the Plaintiff that Plaintiff's allegations in this matter relate to Intuitive's dominance of the market for minimally invasive soft tissue surgical robots ("MIST Surgical Robots") with its da Vinci surgical robots, and that, through exclusionary and anticompetitive conduct, Intuitive uses this dominance to maintain its monopoly in a separate market: the market for replacements and repairs of EndoWrists, which are surgical instruments (e.g., graspers, forceps, scissors, etc.) that are used during the da Vinci robotic surgeries ("EndoWrist Repair and Replacement Market"). I further understand Plaintiff alleges that "Intuitive has gone to extraordinary efforts to leverage its monopoly power in robots for use in minimally invasive soft tissue surgery, the repair and support of those robotic systems, and its monopoly power in instruments for use with such robots to foreclose aftermarket repair of those instruments by any competitors. This costs hospitals and patients at least 30-45% per instrument

¹ United States District Court Northern District of California, *Surgical Instrument Service Company, Inc., Plaintiff, v. Intuitive Surgical, Inc., Defendant*, Case No.: 5:21-cv-03496, Complaint, May 10, 2021 (hereafter "Complaint").

(which savings would increase over time) or hundreds of millions of dollars a year in a \$2.4 billion market, without any safety or technical justification.”² I further understand Plaintiff alleges that an “effect of Intuitive’s anticompetitive conduct is to generate and sustain unreasonably high, supra-competitive prices for aftermarket EndoWrist instruments” (the “Alleged Misconduct”).³

5. In particular, I understand Defendant’s alleged anticompetitive conduct to “foreclose aftermarket repair of those [EndoWrist] instruments by any competitors” includes the following:

- Intuitive’s standard sales and service agreement for its da Vinci surgical robots “demands that customers further agree to a limited license for the use of EndoWrist instruments,” which “expires once an EndoWrist instrument is used up to its maximum number of uses as specified in the documentation accompanying the particular instrument,”⁴ and “prohibits customers from engaging any unauthorized third party to repair, refurbish, or recondition EndoWrist instruments, whether before or after the limited use license has expired.”⁵
- “Between late 2019 to early 2020, Intuitive sent letters to and had in-person conversations with SIS’s customers or potential customers, knowing that they were under contract or in contractual negotiations for repaired EndoWrists. As a result of the threats and misleading statements in those letters and conversations,

² Complaint at ¶28. I further understand Plaintiff alleges that “[w]hen Intuitive discovered that its customers were using SIS’s services, it immediately leveraged its anti-competitive agreements and monopoly power to crush this threat to its supra-competitive EndoWrist profitability.” See Complaint at ¶6.

³ Complaint at ¶24. “Intuitive leverages its market power in the worldwide and domestic markets for the sale of surgical robots used in minimally invasive soft tissue surgery, and the market for repair services for their robots, to pressure its customers to use supra-competitively priced replacement EndoWrist parts.” See Complaint at ¶65.

⁴ Complaint at ¶4. I understand Plaintiff alleges that “EndoWrists also include an internal memory chip” which “counts the number of times the EndoWrist is attached to a da Vinci robot arm, not an actual measure of usage such as usage time, number of movements, or actuation time.” See Complaint at ¶¶30-31. Further, I understand that Plaintiff alleges that the “da Vinci robot system queries the memory chip prior to performing any operations with the particular EndoWrist instrument. After a certain number of uses, usually limited to ten, the EndoWrist instrument is rendered non-operational, based solely on the number of times it is attached to a da Vinci robot arm, without any regard to the actual underlying physical condition of the EndoWrist instrument. Without the services of providers such as SIS, the hospital has no choice but to buy a brand-new replacement EndoWrist instrument from Intuitive at full price.” See Complaint at ¶32.

⁵ Complaint at ¶4.

all of SIS's EndoWrists customers backed out of their contracts or did not sign contracts under negotiation, effectively eviscerating SIS's EndoWrist repair business."⁶

6. I understand from Counsel for the Plaintiff that the relevant period for my analysis is the date SIS entered into contracts and was in discussion for other contracts to provide EndoWrist repair services to numerous hospitals, health care systems, and GPOs in 2019 and 2020, through the present ("Relevant Period").⁷

C. Assignment

7. I have been asked by Counsel for Plaintiff to analyze the following questions:
- a. The relevant antitrust product and geographic markets within which the existence of Intuitive's monopoly power and the likelihood of success of the Alleged Misconduct may be assessed;
 - b. Whether economic analysis and evidence establishes that Intuitive possessed monopoly power in these relevant antitrust markets; and
 - c. Whether economic analysis and evidence establishes that Intuitive's conduct with respect to the Alleged Misconduct was anticompetitive and resulted in harm to competition.

I discuss my analysis of these questions below.

⁶ Complaint at ¶92. "Intuitive's letters make its threats explicit—if the hospital uses repaired instruments, Intuitive will render its surgical robot inoperable. Not only will Intuitive seek damages or indemnity from its customer, but if Intuitive discovers 'Systems being used with instruments by an unauthorized third party, Intuitive may no longer accept your service calls for such Systems.' Because Intuitive also refuses to allow any competition in the market for service of its robots, and refuses to make error codes and other critical information available to third parties, failure to provide such service will render a robot that originally cost well over a million dollars inoperable. Many hospitals have multiple such robots that would thus be rendered inoperable. [...] Again, the threat is explicit—if the hospital uses refurbished instruments, Intuitive will render its surgical robot inoperable." See Complaint at ¶¶102-103. Further, in "private conversations, Intuitive representatives have made this threat even more explicit. In response to one hospital's use of third-party repair services, an Intuitive representative stated that Intuitive would turn the surgical robot into a 'paperweight.'" See Complaint at ¶104.

⁷ Complaint at ¶5.

D. Materials Reviewed

8. In performing my analyses, I have undertaken economic research and analysis based on publicly available documents, as well as materials produced as part of this litigation, in order to understand the U.S. market for minimally invasive soft tissue surgical robots and the market for the repair and replacement of EndoWrist surgical instruments in the U.S., as well as the prices paid for these products. I have also reviewed documents produced by the parties in this matter, trade press, and academic literature. A complete list of the materials I have relied upon in forming my opinions is contained in Appendix B.

E. Summary of Conclusions

9. Based on my analyses and research into the U.S. market for MIST Surgical Robots and EndoWrist Repair and Replacement Market, as well as my training and experience in economics, I have reached the following conclusions:
- a. The market for MIST Surgical Robots constitutes a relevant antitrust product market. Further, the United States constitutes the relevant antitrust geographic market with respect to the tying market for evaluating the Alleged Misconduct.
 - b. The EndoWrist Repair and Replacement Market constitutes a relevant antitrust product market. Further the United States constitutes the relevant antitrust geographic market with respect to the tied market for evaluating the Alleged Misconduct.
 - c. Intuitive possessed monopoly power in the U.S. market for MIST Surgical Robots during the Relevant Period. Further, Intuitive possessed monopoly power in the EndoWrist Repair and Replacement Market in the U.S. during the Relevant Period and used its monopoly power in the market for MIST Surgical Robots to maintain its monopoly in the EndoWrist Repair and Replacement Market in the U.S. during the Relevant Period.

- d. Intuitive's Alleged Misconduct was anticompetitive and resulted in harm to competition in that hospitals had little choice but to pay higher prices for replacement EndoWrist surgical instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS.

II. Industry Background

A. Methods of Surgery

10. In health care practice, there are two primary methods of surgery: open surgery and minimally invasive surgery.⁸ Open surgery refers to a procedure that involves “the cutting of skin and tissues so that the surgeon has a full view of the structures or organs involved.”⁹ Each physical step in such a procedure “is accomplished by natural, intuitive hand movements used to accomplish tasks such as dissection, ligating, and suturing.”¹⁰ One example of open surgery is the removal of organs, such as the gallbladder or kidneys.¹¹
11. The other primary method of surgery is minimally invasive surgery, which refers to “any technique involved in surgery that does not require a large incision.”¹² Minimally invasive surgery is a method of surgery that “allows the patient to recuperate faster with less pain.”¹³ Many surgical techniques today fall under minimally invasive surgery, which “can be used to evaluate illnesses and injuries, as well as to obtain tissue samples

⁸ Stanford Health Care, “General Surgery Types” (hereafter “Stanford Health Care”). Available at: <https://stanfordhealthcare.org/medical-treatments/g/general-surgery/types.html>.

⁹ Stanford Health Care. See, also, John Hopkins Medicine, “Methods of Surgery,” (hereafter “John Hopkins Medicine”). Available at: <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/methods-of-surgery>.

¹⁰ Intuitive-00595673-694 at 677.

¹¹ Stanford Health Care.

¹² Stanford Health Care.

¹³ Johns Hopkins Medicine. See, also, Stanford Health Care.

and make repairs.”¹⁴ One minimally invasive surgical technique is laparoscopy, which was first popularized in the United States in the 1930s.¹⁵

12. Unlike traditional open surgery, laparoscopic surgery (which is sometimes referred to as “keyhole surgery”) does not require a large incision for the surgery to be conducted.¹⁶ Rather, during the surgery, “the surgeon makes one or more small incisions in the abdomen.”¹⁷ These incisions are then used as an entry point for the surgeon to insert a laparoscope, “a long, thin tube with a high-intensity light and a high-resolution camera at the front,” which sends images and video back to a monitor for the surgeon to view.¹⁸ During the procedure, “[c]arbon dioxide gas is passed into the abdominal cavity in order to move the abdominal wall away from the organs and therefore create a larger area in which to work,” while also reducing risk of additional tissue or organ damage.¹⁹ Various other instruments, such as scissors, dissecting tools, and graspers, may also be inserted through additional “puncture holes” that are made as the surgery is performed.²⁰ Today, laparoscopic surgery is most commonly used in gynecology, gastroenterology, and urology.²¹ Because laparoscopic surgeries are not as surgically invasive, laparoscopic surgery has a number of benefits over open surgery, causing laparoscopic surgery to be “routinely performed instead of traditional [open] surgery.”²² Compared to the larger incisions associated with open surgery, the small incisions used in laparoscopic

¹⁴ Johns Hopkins Medicine.

¹⁵ William E. Kelley, “The Evolution of Laparoscopy and the Revolution in Surgery in the Decade of the 1990s,” *Journal of The Society of Laparoscopic & Robotic Surgery*, 2008 (hereafter “Kelley”) 351-357 at p. 351.

¹⁶ National Health Service, “Laparoscopy (keyhole surgery)” (hereafter “NHS”). Available at: <https://www.nhs.uk/conditions/laparoscopy/>. See, also, John Hopkins Medicine.

¹⁷ NHS; Stanford Health Care.

¹⁸ Andrew Gonzalez, M.D., J.D., MPH and Anna Giorgi, “Laparoscopy,” Healthline, October 6, 2018. Available at: <https://www.healthline.com/health/laparoscopy>.

¹⁹ Midlands Clinic, “General Laparoscopic Procedures.” Available at: <https://midlandsclic.com/general-laparoscopic-procedures/>. See, also, MUSC Health, “Introduction to Laparoscopic Surgery” (hereafter “MUSC Health”). Available at: <https://muschealth.org/medical-services/ddc/patients/gi-surgery/laparoscopic-surgery/introduction>.

²⁰ MUSC Health.

²¹ NHS.

²² Johnson Memorial Health, “Recovery Benefits of Laparoscopic Surgery,” August 2015 (hereafter “Johnson Memorial Health”). Available at: <http://blog.johnsonmemorial.org/recovery-benefits-of-laparoscopic-surgery>.

surgery results in less post-operative discomfort, shorter recovery time, less scarring, less bleeding, and reduced risk of infection.²³

B. Introduction of Robotic Surgery

13. Robotic surgery represents the next step in the evolution of minimally invasive surgeries following the success of laparoscopic surgeries. In 1986, “a team using a modified UNIMATION PUMA 200 programmable industrial robotic arm performed the very first robotic assisted surgery (RAS). [...] Since this first successful use of a robot to assist in a surgical procedure, several RAS systems have been developed, but only few of those systems have been commercialized.”²⁴ “Robotic procedures are rapidly becoming the new standard of care.”²⁵ The “first robotic system for laparoscopic surgery became available in 1994. Aesop (formerly Computer Motion, Santa Barbara, CA) directed the laparoscope following the surgeon’s voice command. Zeus, a fully integrated surgical system, became available for investigational use in the United States in 1996.”²⁶ Around the time the Zeus surgical system was launched, “the forerunner to what was eventually to become Intuitive Surgical released the SRI Green Telepresence system, which was later to undergo a radical overhaul before morphing into an early version of the current da Vinci® system.”²⁷ The “ZEUS and da Vinci® systems were effectively unified when Computer Motion and Intuitive Surgical merged in 2003. As a result, further innovations and improvements were centred [sic] on the da Vinci® platform, which has subsequently dominated the world of robotic surgery for almost a decade.”²⁸

14. There are currently three primary types of robotic systems used in the surgical arena: active systems, semi-active systems, and master-slave systems.²⁹ Active systems

²³ Johnson Memorial Health.

²⁴ Sally Kathryn Longmore, Ganesh Naik, and Gaetano D. Gargiulo, “Laparoscopic Robotic Surgery: Current Perspective and Future Directions,” *Robotics*, Vol. 2, No. 9, 2020 (hereafter “Longmore et al.”) at p. 1.

²⁵ Tim Lane, “A short history of robotic surgery,” *Annals of the Royal College of Surgeons of England*, 2018 (hereafter “Lane”) at p. 5.

²⁶ Kelley at p. 355.

²⁷ Lane at p. 6.

²⁸ Lane at p. 7. See, also, Zheng Wang, Sicong Liu, Jing Peng, and Michael Zhiqiang Chen, “The Next-Generation Surgical Robots,” *Intech Open*, 2017, 3-21 at p 4.

²⁹ Lane at p. 5. See, also, Jusuf Jamal, Abdulrahman M. Alshahrani, Jamal M. Arif, Feras M. Almarshad, “Robots in Cancer Surgery: A Boon or Bane,” *Journal of Cancer Therapy*, Vol. 11, No. 12, December 2020, 803-823 at pp. 805-806.

“essentially work autonomously (while remaining under the control of the operative surgeon) and undertake pre-programmed tasks.”³⁰ Semi-active systems “allow for a surgeon-driven element to complement the pre-programmed element of these robot systems.”³¹ Conversely, “master–slave systems (of which the da Vinci® and ZEUS platforms were the forerunners) lack any of the pre-programmed or autonomous elements of other systems.”³² Master-slave systems “are entirely dependent on surgeon activity,” whereby surgeon “hand movements are transmitted to laparoscopic surgical instruments, which faithfully reproduce surgeon hand activity – but intracorporeally.”³³

15. Robotic surgery provides a number of benefits to both patients and surgeons as compared to traditional laparoscopic surgeries. For the patient, these benefits include a more precise surgery, significantly less pain, less risk of infection and blood loss, earlier discharge from the hospital, less scarring and shorter recovery, and, in many cases, better clinical outcomes.³⁴ For the surgeon, these benefits include an enhanced visual field, superior dexterity, and access to hard-to-reach places.³⁵

16. According to one developer of robots for minimally invasive surgery, increased adoption has led to “a double-digit annual growth rate over the past five years.”³⁶ One market research report noted that the “rise in demand for minimally invasive technology is driving the robotic surgery devices market.”³⁷ This same market research report noted

³⁰ Lane at p. 5. Examples of this include the PROBOT and ROBODOC platforms. See Lane at p. 5. See, also, Katherine Levinson, “Robotic Assisted Surgery,” *Electrical and Computer Engineering Design Handbook*, 2015.

³¹ Lane at p. 5.

³² Lane at pp. 5-6.

³³ Lane at p. 6.

³⁴ MedStar Health, “Robotic Surgery” (hereafter “MedStar Health”). Available at: <https://www.medstarhealth.org/services/robotic-surgery>.

³⁵ MedStar Health.

³⁶ Rob Surgical, “Top 5 Trends in the Robotic Surgery Market.” Available at: <https://www.robotsurgical.com/market-trends/>.

³⁷ The Business Research Company, “Robotic Surgery Devices Global Market Report 2022 – By Product And Service (Robotic Systems, Instruments & Accessories, Services), By Surgery Type (Urological Surgery, Gynecological Surgery, Orthopedic Surgery, Neurosurgery, Other Surgery Types), By End User (Hospitals, Ambulatory Surgery Centers) – Market Size, Trends, And Global Forecast 2022-2026,” October 2022 (hereafter “Business Research Company”). Available at: <https://www.thebusinessresearchcompany.com/report/robotic-surgery-devices-global-market-report>.

that the “global robotic surgery devices market grew from \$5.21 billion in 2021 to \$6 billion in 2022 at a compound annual growth rate (CAGR) of 15.2%.”³⁸

C. Intuitive’s Da Vinci Surgical Robot

17. In 1995, Intuitive was founded by Dr. Frederick Moll, M.D., Rob Younge, and John Freund.³⁹ Using technology licensed from another surgical company (SRI), they began development on what would ultimately become the da Vinci surgical robot, which was first installed in late 1998.⁴⁰ The da Vinci “became the first United States FDA-approved integrated robotic surgical system in July 2000,” with Drs. William E. Kelley and Craig C. Owens performing the first procedure shortly thereafter.⁴¹ The da Vinci’s “first FDA clearance was for applications in general surgery; however, additional indications for thoracoscopic (chest) and radical prostatectomy procedures followed one year later.”⁴² Table 1 below lists each of the surgical procedures for which the da Vinci surgical robot has been “cleared by applicable regulatory agencies.”⁴³

Table 1
Approved da Vinci
Surgical Procedures

Cardiac
Colorectal
General Surgery
Gynecology
Head and Neck
Thoracic
Urology

Source: Intuitive for Patients.

18. As illustrated in Figure 1 below, the da Vinci surgical robot is comprised of three separate components: the patient-side cart, the surgeon console, and the vision cart.⁴⁴

³⁸ Business Research Company.

³⁹ Mahdi Azizian, May Liu, Iman Khalaji, and Simon DiMaio, “Chapter 1: The Da Vinci Surgical System,” *The Encyclopedia of Medical Robotics*, Vol. 1, October 2018 (hereafter “Azizian et al.”) 3-28 at p. 5.

⁴⁰ Azizian et al. at p. 5.

⁴¹ Kelley at p. 355. See, also, Azizian et al. at p. 5; Longmore et al. at p. 1.

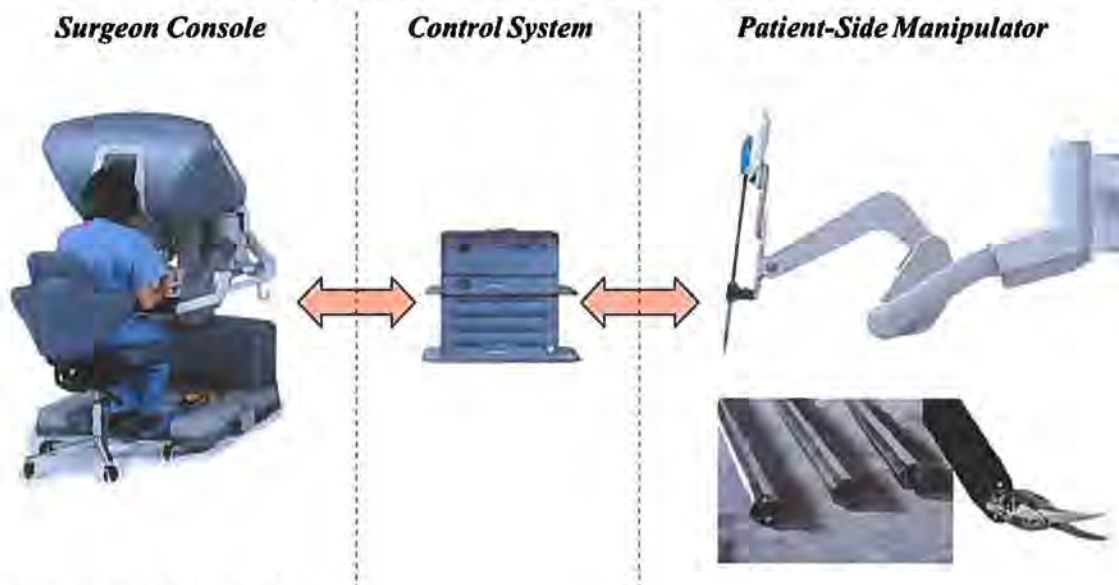
⁴² Azizian et al. at p. 5.

⁴³ Intuitive Surgical, “Intuitive for Patients” (hereafter “Intuitive for Patients”). Available at: <https://www.intuitive.com/en-us/patients/patients>.

⁴⁴ Azizian et al. at p. 8.

Unlike in traditional laparoscopic surgery, the da Vinci is a surgical robot that utilizes a “teleoperation architecture,” which allows the surgeon, through the surgeon console, to operate two interfaces that are used to control the manipulators (or arms) that are part of the patient side cart and operate on the patient via this robot.⁴⁵ At the surgeon console, the surgeon is seated and controls the movement of the surgical instruments that are positioned on the patient-side cart, while also using the console to view the patient and surgical field.⁴⁶ “Each manipulator may support either a stereo endoscopic camera or a surgical instrument, such as a grasper, a scissor, or a needle driver.”⁴⁷

Figure 1
Illustration of da Vinci Surgical Robot Architecture



Source: Azizian et al. at p. 8.

19. At the operating console, the robot translates the surgeon’s hand movements, manipulating and rotating the instruments in real time as the surgery is being performed.⁴⁸ In traditional laparoscopic surgery, surgeons are limited by their own anatomy; their wrists and arms can only move so far and in certain directions, and the precision of human movement is limited. Further, in traditional laparoscopic surgery the

⁴⁵ Azizian et al. at pp. 7-8.

⁴⁶ Longmore et al. at pp. 4, 6; Azizian et al. at p. 7.

⁴⁷ Azizian et al. at p. 8.

⁴⁸ Intuitive Surgical, “About da Vinci Systems” (hereafter “About da Vinci Systems”). Available at: <https://www.davincisurgery.com/da-vinci-systems/about-da-vinci-systems>. See, also, Intuitive Surgical, Inc., SEC Form 10-K, filed February 10, 2021 (hereafter “Intuitive 2020 SEC Form 10-K”) at p. 5.

instruments used are “long, rigid levers that rotate around a fulcrum, or pivot point, located at the port created in the body wall.”⁴⁹ This “fulcrum effect” “reverses movements for the surgeon in laparoscopic surgery;” the instrument tips move in the opposite direction of the surgeon’s hand, requiring the surgeon to adjust their hand-eye coordination and compensate for the reversal of directions caused by the pivot.⁵⁰ In contrast, the surgical instruments used by the da Vinci surgical robot mirror the surgeon’s movement; if the surgeon moves their hand “to the right outside of the body causes the instrument inside the patient to be moved to the right.”⁵¹ Furthermore, da Vinci’s extended range of motion helps to provide “greater dexterity” than can be achieved with “the human hand on its own.”⁵²

20. In addition to the benefits da Vinci’s surgical instruments provides, the surgeon console also provides additional benefits to the surgeon. In traditional laparoscopic surgery, “the surgeon must look up and away from the instruments to a nearby 2D video monitor to see an image of the target anatomy.”⁵³ Moreover, the “surgeon must also rely on his/her patient-side assistant to position the camera correctly.”⁵⁴ In surgeries conducted with the da Vinci surgical robot, surgeons operate the robot and the instruments and reposition the camera while seated at a console ergonomically designed to allow natural hand-eye positioning and comfortable seating.⁵⁵

21. While the conceptual and operational underpinnings of the da Vinci surgical robot have remained consistent, Intuitive has commercialized a number of different models over the years, as rapid technological development has allowed for more advanced equipment and instrumentation to be integrated into the da Vinci surgical robot. Intuitive

⁴⁹ Intuitive 2020 SEC Form 10-K at p. 5.

⁵⁰ Jaydeep H Palep, “Robotic assisted minimally invasive surgery,” *Journal of Minimal Access Surgery*, Vol.5, No.1, January-March 2009, 1-7 at p. 1. See, also, Intuitive 2020 SEC Form 10-K at p. 5.

⁵¹ Intuitive 2020 SEC Form 10-K at p. 5.

⁵² UCLA Health, “About Robotic Surgery at UCLA.” Available at: <https://www.uclahealth.org/robotic-surgery/what-is-robotic-surgery>.

⁵³ UC Health, “About the daVinci Surgical System” (hereafter “UC Health”). Available at: <https://www.uchealth.com/services/robotic-surgery/patient-information/davinci-surgical-system/>.

⁵⁴ UC Health.

⁵⁵ UC Health; SofMedica, “DaVinci Surgical System.” Available at: <https://sofmedica.com/our-portfolio/robotic-surgery/>.

commercialized its da Vinci standard surgical robot in 1999.⁵⁶ Since then, it has released a number of updated models, including the da Vinci S, da Vinci Si, da Vinci Xi, da Vinci X, and da Vinci SP.⁵⁷ The da Vinci S and da Vinci Si models are no longer sold in the U.S.⁵⁸ A timeline of the commercialization of Intuitive's various da Vinci surgical robots is illustrated in Figure 2 below.

Figure 2
Commercialization Timeline of da Vinci Surgical Robots

Year	1999	2006	2009	2014	2017	2018
System	Standard ¹	S	Si	Xi	X	SP
						

Sources: Intuitive SEC Form 10-Q, filed on July 23, 2020 at p. 26; abex Excelencia Robotica.

¹ Fourth arm introduced in 2003.

22. In addition to the da Vinci surgical robot, Intuitive also designs and manufactures the surgical instruments that are attached to the ends of the robotic arms of the da Vinci robot. I understand that, “[d]ue to being commercially available for twenty years, the da Vinci RAS system has the largest library of end effectors available of all RAS systems.”⁵⁹ These instruments, called EndoWrists, have tips that can be customized to accommodate various surgical procedures.⁶⁰ These surgical instrument attachments “are offered in a variety of diameters, of which 8mm and 12mm diameter sizes are the most commonly sold,” and include “forceps, scissors, electrocautery tools, scalpels, and other surgical tools that are familiar to the surgeon from open surgery and conventional [minimally invasive surgery].”⁶¹ Today, Intuitive offers approximately 70 different multi-

⁵⁶ Intuitive Surgical, Inc., SEC Form 10-Q, filed October 21, 2022 (hereafter “Intuitive 2022 SEC Form 10-Q”) at p. 26. See, also, Intuitive Surgical, “Move Surgery Forward. Again. da Vinci SP.” Available at: <https://www.intuitive.com/en-us/products-and-services/da-vinci/systems/sp>.

⁵⁷ Intuitive SEC Form 10-Q, September 2022 at p. 26. The da Vinci SP surgical system was designed to perform single port minimally invasive surgery. See the “da Vinci SP” page of the Intuitive website, available online at <https://www.intuitive.com/en-us/products-and-services/da-vinci/systems/sp>.

⁵⁸ 30(b)(6) Deposition of Marshall Mohr, November 7, 2022 at 59:22-60:10.

⁵⁹ Longmore et al. at p. 13. “Not only does the da Vinci RAS system have the largest variety of end effector types, it also has a large variety of each type of end effector.” See Longmore et al. at p. 13.

⁶⁰ Intuitive Surgical, Inc., SEC Form 10-K, filed February 3, 2022 (hereafter “Intuitive 2021 SEC Form 10-K”) at p. 7.

⁶¹ Intuitive 2021 SEC Form 10-K at pp. 7-8.

port surgical instruments.⁶² Figure 3 below illustrates examples of EndoWrist instruments that can be used in conjunction with Intuitive's da Vinci Xi and da Vinci X surgical robots.

Figure 3
Examples of EndoWrist Surgical Instruments

EndoWrist® Bipolar Cautery Instruments

	<p>Maryland Bipolar Forceps</p> <table><tr><td>Da Vinci Xi, X</td><td>10 Uses</td></tr><tr><td>Part #</td><td>470172</td></tr></table>	Da Vinci Xi, X	10 Uses	Part #	470172		<p>Fenestrated Bipolar Forceps</p> <table><tr><td>Da Vinci Xi, X</td><td>10 Uses</td></tr><tr><td>Part #</td><td>470205</td></tr></table>	Da Vinci Xi, X	10 Uses	Part #	470205
Da Vinci Xi, X	10 Uses										
Part #	470172										
Da Vinci Xi, X	10 Uses										
Part #	470205										
	<p>Curved Bipolar Dissector</p> <table><tr><td>Da Vinci Xi, X</td><td>10 Uses</td></tr><tr><td>Part #</td><td>470344</td></tr></table>	Da Vinci Xi, X	10 Uses	Part #	470344		<p>Micro Bipolar Forceps</p> <table><tr><td>Da Vinci Xi, X</td><td>10 Uses</td></tr><tr><td>Part #</td><td>470171</td></tr></table>	Da Vinci Xi, X	10 Uses	Part #	470171
Da Vinci Xi, X	10 Uses										
Part #	470344										
Da Vinci Xi, X	10 Uses										
Part #	470171										
	<p>Long Bipolar Grasper</p> <table><tr><td>Da Vinci Xi, X</td><td>10 Uses</td></tr><tr><td>Part #</td><td>470400</td></tr></table>	Da Vinci Xi, X	10 Uses	Part #	470400		<p>Force Bipolar</p> <table><tr><td>Da Vinci Xi, X</td><td>10 Uses</td></tr><tr><td>Part #</td><td>470405</td></tr></table>	Da Vinci Xi, X	10 Uses	Part #	470405
Da Vinci Xi, X	10 Uses										
Part #	470400										
Da Vinci Xi, X	10 Uses										
Part #	470405										

Source: da Vinci Xi/X Instrument & Accessory Catalog, January 2019.

23. Each EndoWrist surgical instrument comes equipped with a programmed memory chip that helps to determine how the given EndoWrist instrument and the da Vinci surgical robot work together.⁶³ Additionally, the memory chip tracks the number of times that each EndoWrist surgical instrument is used in a surgical procedure and will “generally not allow the instrument to be used for more than the prescribed number of procedures.”⁶⁴ EndoWrist surgical instruments used on S and Si da Vinci surgical robots operate via hardwire connection, while those used on Xi and X da Vinci surgical robots operate on a radio-frequency identification (RFID) system.⁶⁵ When the EndoWrist instrument reaches this prescribed number of uses, it will stop functioning and must be

⁶² Intuitive 2021 SEC Form 10-K at p. 55.

⁶³ Intuitive 2021 SEC Form 10-K at p. 8.

⁶⁴ Intuitive 2021 SEC Form 10-K at p. 8.

⁶⁵ Deposition of Anthony McGrogan, June 7, 2021 at 77:11-23.

replaced with a new instrument.⁶⁶ The standard number of uses for EndoWrist surgical instruments is ten, however, in October 2020, Intuitive launched an “Extended Use Program” which allows for twelve to 18 uses for select da Vinci Xi and da Vinci X surgical robots.⁶⁷ The fourth generation of da Vinci surgical robots (“da Vinci Xi” and “da Vinci X”) utilize different EndoWrist surgical instruments that are not compatible with earlier generations of da Vinci surgical robots.⁶⁸

24. The number of da Vinci surgical robots installed in hospitals in the U.S. has grown steadily over the last two decades. In 2005, there were nearly 300 da Vinci surgical robots installed in U.S. hospitals.⁶⁹ By 2010, Intuitive’s installed base had grown to 1,285,⁷⁰ and by the end of 2021 it had reached more than 4,100.⁷¹ Figure 4 below illustrates the growth of the da Vinci surgical robot’s installed base in the U.S. from 2009 to 2021.

⁶⁶ Longmore et al. at p. 16.

⁶⁷ Longmore et al. at p. 16; Intuitive 2021 SEC Form 10-K at p. 8.

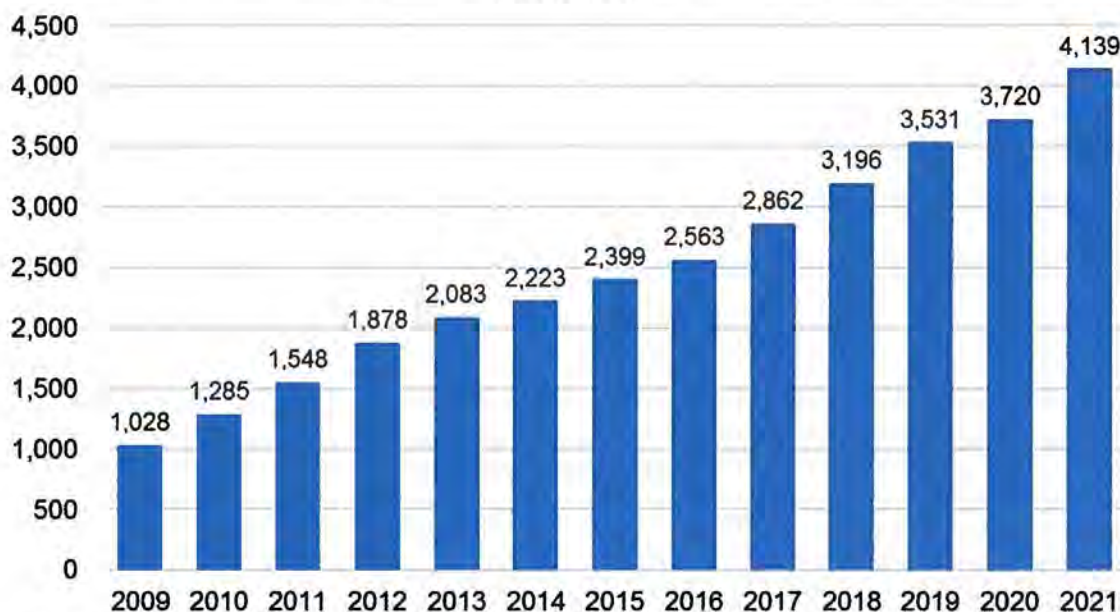
⁶⁸ Intuitive 2022 SEC Form 10-Q at p. 27.

⁶⁹ Intuitive reported an installed base of 296 da Vinci surgical robots in North America in 2005. See Intuitive Surgical, Inc., SEC Form 10-K, filed March 15, 2006 at p. 33.

⁷⁰ Intuitive Surgical, Inc., SEC Form 10-K, filed February 1, 2011 at p. 43.

⁷¹ Intuitive 2021 SEC Form 10-K at p. 12.

Figure 4
Installed Base of da Vinci Surgical Robots in the United States
2009 - 2021



Source: Intuitive SEC Form 10-Ks, 2009 - 2021.

25. Along with the steady growth in the installed base of da Vinci surgical robots, Intuitive's Instruments and Accessories business segment (which primarily includes its sales of EndoWrist surgical instruments) has also achieved significant growth in recent years. For example, as shown in Table 2 below, from 2017 to 2021, Intuitive's revenues from its Instruments and Accessories business segment in the U.S. increased 76.2 percent. Instruments and Accessories' growth in sales outpaced Intuitive's other business segments, Systems (which primarily consists of sales of da Vinci surgical robots) and Service, whose sales increased 69.8 percent and 43.9 percent, respectively, during this time. The Instruments and Accessories business segment accounts for a significant portion of Intuitive's overall U.S. revenues; in 2021, Instruments and Accessories sales accounted for 57.7 percent of Intuitive's overall revenues in the U.S.

Table 2
Intuitive U.S. Revenue by Business Segment
2017 - 2021

(in millions \$)

Business Segment	2017	2018	2019	2020	2021	% Change
Systems	\$ 603.5	\$ 692.2	\$ 830.7	\$ 695.0	\$ 1,024.8	69.8%
Instruments and Accessories	\$ 1,263.1	\$ 1,485.2	\$ 1,790.4	\$ 1,785.1	\$ 2,225.1	76.2%
Service	\$ 419.2	\$ 456.1	\$ 508.4	\$ 482.6	\$ 603.3	43.9%
Total	\$ 2,285.8	\$ 2,633.5	\$ 3,129.5	\$ 2,962.7	\$ 3,853.2	

Source: 2021 Intuitive SEC Form 10-K at p. 102, 2020 Intuitive SEC Form 10-K at p. 98; Intuitive Surgical, Inc., SEC Form 10-K, filed on February 7, 2020 at p. 87.

III. The Market for MIST Surgical Robots in the United States Constitutes a Relevant Antitrust Market

26. As I previously discussed, I understand from Counsel for the Plaintiff that Plaintiff's allegations in this matter relate to Intuitive's use of its dominance of the market for minimally invasive soft tissue surgical robots with its da Vinci surgical robots to maintain its monopoly in a separate market: the market for replacements and repairs of EndoWrists, which are surgical instruments (e.g., graspers, forceps, scissors, etc.) that are used during the da Vinci robotic surgeries. To evaluate Plaintiff's claims in this regard, it is necessary to determine whether the tying market, the market for MIST Surgical Robots in the United States, constitutes a relevant antitrust market. Based on my analysis of the documents and data produced in this litigation, as well as my training and experience in economics and my research and analysis into the market for MIST Surgical Robots in the United States, I have concluded that the market for MIST Surgical Robots constitutes the relevant antitrust product market in which sales of da Vinci surgical robots occurs. I have also concluded that the United States constitutes the relevant antitrust geographic market with respect to the tying market for evaluating the Alleged Misconduct. I discuss my bases for these conclusions below.

A. The Market for MIST Surgical Robots is a Relevant Antitrust Product Market

27. In economics, a relevant antitrust product market is comprised of the smallest possible set of goods for which a hypothetical monopolist could exercise market power to raise prices on that set of products by a small, but significant, amount without losing so

much in sales volume that the increase in price is unprofitable.⁷² If the analysis concludes that there are other products which would make such a price increase unprofitable, the market definition is broadened to include that set of goods, and the hypothetical monopolist test is applied again. In general, an economic analysis of the relevant antitrust product market requires identifying “products that are close demand or supply substitutes.”⁷³ That is, a relevant market should contain all the products which are substitutable for each other in the face of small but significant, non-transitory price increases; an analysis of the relevant market thus necessarily focuses on an analysis of *economic* substitutability. Based on my research and analysis into the tying market (the market for MIST Surgical Robots) and my training and experience in economics, I have determined that the market for MIST Surgical Robots constitutes a relevant antitrust product market, and that sales of da Vinci surgical robots occur in this relevant antitrust product market. I base this conclusion on the fact that there are no economic substitutes for minimally invasive soft tissue surgeries performed with MIST Surgical Robots and that MIST Surgical Robots are a necessary input in performance of those surgeries. In particular, as I describe below, other forms of minimally invasive soft tissue surgery (such as traditional laparoscopic surgery) and non-MIST robotic surgeries are not economic substitutes for robotically assisted minimally invasive soft tissue surgeries. Therefore, because there are no economic substitutes for robotically assisted minimally

⁷² One of the tools economists rely upon in defining relevant antitrust product and geographic markets is the so-called “SSNIP” test. A SSNIP test is based upon a hypothetical “small but significant and non-transitory increase in price,” as described in the Horizontal Merger Guidelines. The SSNIP test is used by the FTC and the DOJ to define relevant economic markets. The SSNIP test is intended to ascertain whether a hypothetical monopolist can exercise market power in a relevant product or geographic market. If the hypothetical monopolist is able to permanently (that is, in a “non-transitory” way) raise prices for a product or group of products by a “small but significant” amount, usually assumed to be five percent, without losing so much in sales volume that the increase in price is unprofitable, then that product or group of products constitutes a relevant antitrust product market. See U.S. Department of Justice and the Federal Trade Commission, “Horizontal Merger Guidelines,” August 19, 2010 (hereafter “Horizontal Merger Guidelines”) at § 4.1.1. “Even when the evidence necessary to perform the hypothetical monopolist test quantitatively is not available, the conceptual framework of the test provides a useful methodological tool for gathering and analyzing evidence pertinent to customer substitution and to market definition.” See Horizontal Merger Guidelines at § 4.1.3.

⁷³ Dennis Carlton and Jeffrey Perloff, *Modern Industrial Organization*. Fourth Edition Global, Reading, MA: Addison Wesley, 2015 (hereafter “Carlton & Perloff”) at p. 670. “Product B is a *demand substitute* for A if an increase in the price of A causes consumers to use more B instead. Product B is a *supply substitute* for A if, in response to an increase in the price of A, firms that are producing B switch some of their production facilities to the production of A.” See Carlton and Perloff at p. 646 (emphasis in original). See, also, Horizontal Merger Guidelines at § 4.

invasive soft tissue surgeries, which are defined by the use of the MIST Surgical Robot (of which da Vinci is the dominant type during the Relevant Period), there are no economic substitutes for MIST Surgical Robots.

28. Furthermore, evidence demonstrates that the market for MIST Surgical Robots is not part of the same relevant antitrust market as the market for minimally invasive soft tissue surgeries performed with MIST Surgical Robots. For instance, one market is an input market (the market for MIST Surgical Robots) and the other is an output market (the market for or minimally invasive soft tissue surgeries performed with MIST Surgical Robots). Further, given this distinction, these two markets have distinct customer bases (MIST Surgical Robots are sold to hospitals, that, in turn, use these surgical robots as a necessary input in the performance of robotically assisted minimally invasive soft tissue surgeries that they sell to their customers, including patients and/or third-party payors such as health insurance companies). In addition, later in this Expert Report I discuss evidence demonstrating that the market for MIST Surgical Robots is distinct from the EndoWrist Repair and Replacement Market.

29. A product is an “economic substitute” for another product if a small but significant change in price for that product results in increased demand for the other product.⁷⁴ The change in price necessary to cause consumers to switch to a substitute good is often considered to be around five percent.⁷⁵ I discuss the evidence, both from the public domain and in documents produced in discovery as part of this litigation, demonstrating that there were no available economic substitutes for minimally invasive soft tissue surgeries performed using MIST Surgical Robots during the Relevant Period and thus there are no economic substitutes for MIST Surgical Robots, in greater detail below.

⁷⁴ Robert S. Pindyck and Daniel L. Rubinfeld, *Microeconomics*, Eighth Edition, Upper Saddle River, New Jersey: Pearson Education, 2013 (hereafter “Pindyck & Rubinfeld (8th edition)”) at pp. 24-25.

⁷⁵ Five percent is the number commonly adopted by the U.S. Department of Justice and the Federal Trade Commission when evaluating the competitive effects of mergers. See Horizontal Merger Guidelines at § 4.1.2.

- i. Traditional Laparoscopic Surgeries are Not an Economic Substitute for Minimally Invasive Soft Tissue Surgeries Performed with MIST Surgical Robots, and Thus Do Not Discipline Pricing of MIST Surgical Robots

30. Earlier in this Expert Report I discussed traditional laparoscopic surgeries and how they compared to surgeries performed with MIST Surgical Robots. While many surgeries can be performed by use of either a MIST Surgical Robot or by way of a traditional laparoscopic surgery, meaning that the two may be to some extent *functional* substitutes, evidence I have reviewed demonstrates that traditional laparoscopic surgeries are, at best, only limited functional substitutes and not economic substitutes for minimally invasive soft tissue surgeries performed using MIST Surgical Robots.⁷⁶ For example, Stacey Donovan, Executive Director of Surgical Services at Evergreen Health (a hospital located in Kirkland, WA), testified:

Q. If Intuitive raised the price of the da Vinci robot by 5 to 10 percent, would your hospital have looked to perform more traditional nonrobotic surgeries instead of acquiring the da Vinci robot? [...]

THE WITNESS: No, we would not have. [...]

Q. And why not?

A. We would have - - we would have lost business if we chose to not - - if we chose to not have a - - the option of minimally invasive robotic surgery at Evergreen, we would have surgeons that would leave, and we would lose revenue.⁷⁷

Similarly, Edward Harrich, Director of Surgical Services at Pullman Regional Hospital, testified that Pullman Regional Hospital would not “look to perform more traditional, nonrobotic surgeries instead of purchasing a da Vinci robot” if faced with a similar “5 to 10 percent” price increase, adding that he did not believe such a price increase “would

⁷⁶ As a matter of economics, the distinction between functional substitutes and economic substitutes is important; two goods are only economic substitutes when the price of one disciplines the price of the other. For example, one could use either drywall or plaster lath to build a house. They are functional substitutes, but they are not *economic* substitutes as a decrease in the price of plaster lath of a “small but significant” amount would not have a significant adverse impact on drywall sales. The key issue in determining whether two products are economic substitutes is whether customers would switch from one product to the other *in response to a change in their relative prices*.

⁷⁷ Deposition of Stacey Donovan, May 27, 2021 (hereafter “Donovan Deposition”) at 9:3-14, 44:20-45:9.

play a factor” in the decision of whether to perform more traditional laparoscopic surgeries in lieu of purchasing a da Vinci surgical robot.⁷⁸

31. The evidence discussed above demonstrates that a nominal change in price for MIST Surgical Robots (namely, Intuitive’s da Vinci robot), which would have resulted in a significant increase in the price of the surgeries performed using those surgical robots, would not result in increased demand for traditional laparoscopic surgeries. This constitutes one form of evidence demonstrating that traditional laparoscopic surgeries are not economic substitutes for surgeries performed with MIST Surgical Robots and, thus, are not part of the same relevant antitrust product market as MIST Surgical Robots. I discuss additional evidence that forms the basis of this conclusion in more detail below.

a. Intuitive Acknowledged that it Did Not View Traditional Laparoscopic Surgery as Competition for Surgeries performed with MIST Surgical Robots

32. One form of evidence demonstrating that traditional laparoscopic surgeries did not constitute economic substitutes for minimally invasive soft tissue surgeries performed using MIST Surgical Robots is that Intuitive itself acknowledges that it did not view traditional laparoscopic surgeries as competition for its da Vinci surgical robots. For example, in a “preparation document for a panel discussion at a society surgeon led meeting,”⁷⁹ in response to a potential question about whether it planned to “go into laparoscopic surgery,” Intuitive stated: “We do not see ourselves in competition with laparoscopy. It is about the right tool for the right job.”⁸⁰ In response to a July 2017 request from a colleague regarding an analysis of pricing per procedure, Bob DeSantis, Intuitive’s Executive Vice President and Chief Product Officer, responded: “Your analysis is grounded on procedure pricing vs competitive lap. While this is a consideration, I’m not sure it’s the primary one. I think our value proposition vs lap is a winning one today in targeted procedures.”⁸¹ Among the “bigger considerations” noted

⁷⁸ Deposition of Edward W. Harrich, May 24, 2021 (hereafter “Harrich Deposition”) at 9:5-9, 51:7-16.

⁷⁹ Deposition of Glenn Vavoso, May 14, 2021 (hereafter “Vavoso Deposition”) at 65:16-69:12, Exhibit 8, Exhibit 9.

⁸⁰ Vavoso Deposition Exhibit 9 at Intuitive-00269126.

⁸¹ 30(b)(6) Deposition of Bob DeSantis, May 27, 2021 (hereafter “DeSantis Deposition”) Exhibit 4 at Intuitive-00147735.

by Mr. DeSantis was “a true robotic competitive threat.”⁸² Regarding this statement, Mr. DeSantis testified:

Q. What did you mean when you said “a true robotic competitive threat”?

A. So my thought here was that robotics is differentiated from lap and its value proposition. So therefore, when we think about our place in the market, we should be thinking about our robotic offering versus other robotic offerings rather than lap.⁸³

33. Further, evidence demonstrates that Intuitive requires many of its employees to sign non-compete agreements. In those agreements, Intuitive defines competitors as “any business which directly competes, or plans to compete, with the Company in any of the following areas: robotic assisted surgery, robotic assisted catheter control, augmented reality surgery.”⁸⁴ Thus, Intuitive’s own definition of competitors in these agreements does not make any mention of non-robotic surgery.

34. The evidence discussed above demonstrates that Intuitive itself did not view traditional laparoscopic surgery as competition for surgeries performed with its da Vinci MIST Surgical Robots. This constitutes one form of evidence demonstrating that traditional laparoscopic surgeries are not economic substitutes for minimally invasive soft tissue surgeries performed using MIST Surgical Robots, and, thus, are not part of the same relevant antitrust product market as MIST Surgical Robots.

b. MIST Surgical Robots such as Da Vinci Possess Different Features and Benefits to Surgeons and Patients Compared to Traditional Laparoscopic Surgeries

35. Another form of evidence I have reviewed that demonstrates that traditional laparoscopic surgeries are not economic substitutes for minimally invasive soft tissue surgeries performed using MIST Surgical Robots is the different features and benefits that MIST Surgical Robots (such as Intuitive’s da Vinci robot) possess compared to

⁸² DeSantis Deposition Exhibit 4 at Intuitive-00147735 (emphasis in original).

⁸³ DeSantis Deposition at 29:20-30:2.

⁸⁴ Vavoso Deposition Exhibit 21 at Intuitive-00423276.

traditional laparoscopic surgical procedures. As a November 2018 Goldman Sachs report on “Robotic Surgery and the OR of the Future,” noted:

Successful treatment was often dependent on selection of a “good surgeon” which is a highly qualitative and subjective process. With the advent of robotic surgery, surgical procedures have become more minimally invasive, more closely linked to technological advances in imaging/novel design of end effectors, and seen improved precision and patient outcomes.⁸⁵

36. At deposition, Stacey Donovan of Evergreen Hospital testified that the benefits of da Vinci surgery over traditional laparoscopic surgery for surgeons included “greater dexterity, better visualization, easier access to areas inside a body cavity that are difficult to access with traditional laparoscopic instruments. They have 3D vision rather than 2D vision, which you traditionally get with laparoscopic surgery.”⁸⁶ Edward Harrich of Pullman Regional Hospital testified that, “[w]hen compared to traditional or laparoscopic surgery,” da Vinci surgical robots resulted in “patients report[ing] less pain, less scarring, a shorter hospital stay, and a quicker return to their daily activities.”⁸⁷ When asked in an interview about the “biggest benefits of using surgical robots today,” Dr. Jay Redan, Chief of Surgery at Florida Hospital-Celebration Health, responded: “The benefit to the doctor and patient is better visualization, more precise surgery and fewer complications that can hopefully be better outcomes (yet to be proven).”⁸⁸

37. Evidence of da Vinci’s different features and benefits that I have reviewed includes acknowledgements of such features and benefits made by Intuitive itself. For example, in its 2020 Form 10-K, Intuitive described its da Vinci surgical robot in the following way:

⁸⁵ Isaac Ro, Veronika Dubajova, CFA, Akinori Ueda, Ph. D., Ziyi Chen, Jack O’Connell, Sara Silverman, and Frits Jonker, “Digital Health: Robotic Surgery and the OR of the Future,” Goldman Sachs: Equity Research, November 15, 2018 (hereafter “November 2018 Goldman Sachs Report”) 1-16 at p. 9.

⁸⁶ Donovan Deposition at 18:22-19:11. Ms. Donovan added that da Vinci surgery “also, with [the] addition of -- it’s a called Firefly or it -- it’s a medication that’s given that lights up tissues. It provides a better delineation between healthy tissues and tissues that may have cancer involved.” Donovan Deposition at 18:22-19:11.

⁸⁷ Harrich Deposition at 17:11-20:22.

⁸⁸ November 2018 Goldman Sachs Report at p. 6. Dr. Redan also noted that the “benefits of being an early adopter of successful technology is a benefit to the hospital.” November 2018 Goldman Sachs Report at p. 6.

Da Vinci Surgical Systems enable surgeons to extend the benefits of MIS [minimally invasive surgery] to many patients who would otherwise undergo a more invasive surgery by using computational, robotic, and imaging technologies to overcome many of the limitations of traditional open surgery or conventional MIS. Surgeons using a da Vinci Surgical System operate while seated comfortably at a console viewing a 3D, high-definition image of the surgical field. This immersive console connects surgeons to the surgical field and their instruments. While seated at the console, the surgeon manipulates instrument controls in a natural manner, similar to open surgical technique. Our technology is designed to provide surgeons with a range of articulation of the surgical instruments used in the surgical field analogous to the motions of a human wrist, while filtering out the tremor inherent in a surgeon's hand.⁸⁹

38. In this same 2020 Form 10-K, Intuitive lists the following “features and benefits to surgeons” of its da Vinci surgical robot:

- Immersive 3DHD Visualization⁹⁰
- Precise and Tremor-Free Endoscope Control⁹¹
- Advanced Instruments⁹²

⁸⁹ Intuitive 2020 SEC Form 10-K at p. 52. Intuitive also states: “The da Vinci Surgical System is designed to enable complex surgery using a minimally invasive approach. It consists of an ergonomic surgeon console or consoles, a patient-side cart with an interactive arm or arms, a high-performance vision system, and proprietary instruments and accessories. Surgeons using the da Vinci system operate while seated comfortably at a console viewing a three-dimensional, high definition (‘3DHD’) image of the surgical field. This immersive visualization connects surgeons to the surgical field and their instruments. While seated at the console, the surgeon manipulates instrument controls in a natural manner, similar to the open surgery approach.” See Intuitive 2020 SEC Form 10-K at p. 4.

⁹⁰ Intuitive 2020 SEC Form 10-K at p. 4. “Our vision system includes a 3DHD endoscope with two independent vision channels linked to two separate color monitors through sophisticated image processing electronics. The da Vinci Surgical System provides visualization of the target anatomy with natural depth-of-field and magnification that is intended to facilitate accurate tissue identification and tissue layer differentiation. With our Firefly Fluorescence Imaging technology, surgeons can use our specialized imaging hardware in combination with an injectable fluorescent dye to visualize vasculature, tissue perfusion, or biliary ducts beneath tissue surfaces in real-time.” See Intuitive 2020 SEC Form 10-K at p. 4.

⁹¹ Intuitive 2020 SEC Form 10-K at p. 4. “Our imaging system also incorporates our proprietary camera control technology that allows the surgeon to easily change, move, zoom, and rotate his or her field of vision. Surgeons can reposition the surgical camera quickly with foot controls or zoom in, out, up, down, left, or right by moving their hands while maintaining a stable image.” See Intuitive 2020 SEC Form 10-K at p. 4.

⁹² Intuitive 2020 SEC Form 10-K at p. 4. “We offer a comprehensive suite of stapling, energy, and core instrumentation for our surgical systems. Most of our proprietary instruments feature EndoWrist technology, incorporating “wrist” joints. Inspired by the human hand, our wristed instruments enable

- Intuitive Instrument Movement⁹³
- Scaled, Tremor Filtered Instrument Movement⁹⁴
- Improved Surgeon Ergonomics⁹⁵
- Multi-Specialty Surgical Platform⁹⁶
- Advanced Training Tools⁹⁷

Consistent with the features and benefits discussed above, both Glenn Vavoso (Senior Vice President and General Manager for Asia and Indirect Global markets) and Bob DeSantis (Executive Vice President and Chief Product Officer) of Intuitive testified to the many features and benefits da Vinci surgical robots possess over traditional laparoscopic surgery.⁹⁸

surgeons to orient the instruments carefully relative to the tissue and suture with precision, just as they can in open surgery.” See Intuitive 2020 SEC Form 10-K at p. 4.

⁹³ Intuitive 2020 SEC Form 10-K at p. 5. “Our technology is designed to transform the surgeon’s natural hand movements outside of the body into corresponding micro-movements inside the patient’s body. For example, with the da Vinci Surgical System, a hand movement to the right outside of the body causes the instrument inside the patient to be moved to the right. In contrast, conventional minimally invasive surgery (“MIS”) instruments are long, rigid levers that rotate around a fulcrum, or pivot point, located at the port created in the body wall. In conventional MIS, the instrument tip moves in the opposite direction from the surgeon’s hand, and surgeons must adjust their hand-eye coordination to compensate for the direction reversal by the pivot.” See Intuitive 2020 SEC Form 10-K at p. 5.

⁹⁴ Intuitive 2020 SEC Form 10-K at p. 5. “With our technology, a surgeon can also use “motion scaling,” a feature that translates, for example, a three-millimeter hand movement outside the patient’s body into a one-millimeter instrument movement in the surgical field inside the patient’s body. Motion scaling is designed to allow precision and control for delicate tasks. In addition, our technology filters the tremor inherent in a surgeon’s hands.” See Intuitive 2020 SEC Form 10-K at p. 5.

⁹⁵ Intuitive 2020 SEC Form 10-K at p. 5. “The da Vinci Surgical System is designed to allow surgeons to operate while seated, which may be clinically advantageous because of reduced surgeon fatigue. The da Vinci Surgical System’s design provides natural hand-eye alignment at the surgeon’s console. Because the da Vinci Surgical System’s robotic arms hold the camera and instruments steady, there is less surgeon and assistant fatigue.” See Intuitive 2020 SEC Form 10-K at p. 5.

⁹⁶ Intuitive 2020 SEC Form 10-K at p. 5. “The da Vinci Surgical System is designed to enable surgeons to perform a wide range of surgical procedures within our targeted gynecologic, urologic, general surgery, cardiothoracic, and head and neck specialties. To date, surgeons have used the da Vinci Surgical System to perform dozens of different types of surgical procedures. While we do not expect all of these different types of procedures to become widely adopted, they demonstrate the flexibility of the da Vinci Surgical System.” See Intuitive 2020 SEC Form 10-K at p. 5.

⁹⁷ Intuitive 2020 SEC Form 10-K at p. 5. “Training technologies include our Simulation program, which provides for independent da Vinci skills development through interactive Virtual Reality (“VR”) exercises, and our telementoring program, which provides real-time, surgeon-to-surgeon learning and collaboration during robotic-assisted surgery with a da Vinci Surgical System.” See Intuitive 2020 SEC Form 10-K at p. 5.

⁹⁸ See, for example, Vavoso Deposition at 32:18-48:15; DeSantis Deposition at 107:12-114:1.

39. The evidence discussed above demonstrates that MIST Surgical Robots possess different features and benefits to surgeons and patients over traditional laparoscopic surgery. Consistent with the evidence discussed earlier in this Expert Report, hospitals are unlikely forego these features and benefits of MIST Surgical Robots in response to a small but significant increase in price. This constitutes one piece of evidence demonstrating that traditional laparoscopic surgeries are not economic substitutes for minimally invasive soft tissue surgeries performed using MIST Surgical Robots and that MIST Surgical Robots constitute a relevant antitrust product market.

c. Non-Clinical Benefits of MIST Surgical Robots Compared to Traditional Laparoscopic Surgeries

40. Additional evidence I have reviewed demonstrating that traditional laparoscopic surgeries are not economic substitutes for surgeries performed with MIST Surgical Robots includes various other non-clinical benefits to hospitals that utilize MIST Surgical Robots. One such non-clinical benefit is derived from a hospital's marketing of its use of MIST Surgical Robots, such as da Vinci, to increase profits. For example, a November 2018 Goldman Sachs report on "Robotic Surgery and the OR of the Future" noted:

[R]obotic surgery has become a very effective marketing tool for hospitals who adopt the technology. Many surgical procedures are important profit centers to a hospital which in turn created an incentive for early adopters to advertise these capabilities directly to patients in an attempt to portray the institution as a leading center of excellence for complex illnesses such as cancer.⁹⁹

This report added that, "[f]or hospitals, **general surgery procedures are likely to remain key profit centers, making capital spending for value-add technologies a continued priority.**"¹⁰⁰ In 2013, Memorial Hospital in Douglass, WY purchased a \$2 million da Vinci surgical robot.¹⁰¹ Regarding that purchase, Memorial Hospital's CEO,

⁹⁹ November 2018 Goldman Sachs Report at p. 10 (emphasis in original).

¹⁰⁰ November 2018 Goldman Sachs Report at p. 10 (emphasis in original). This report further noted: "We therefore believe the continued adoption of these technologies will have far-reaching implications for the business model around general surgery." See November 2018 Goldman Sachs Report at p. 10.

¹⁰¹ Jaimy Lee, "Surgical-Robot Costs Put Small Hospitals in a Bind," *Modern Healthcare*, April 19, 2014 (hereafter "Lee"). Available at: <https://www.modernhealthcare.com/article/20140419/MAGAZINE/304199985/surgical-robot-costs-put-small-hospitals-in-a-bind>.

Ryan Smith, said that he “doesn’t mind if it takes awhile for the pricey new piece of equipment to pay off because it’s already attracting patients who previously would have traveled to other hospitals in Colorado or Utah to get robotic surgery.”¹⁰² One 2004 academic journal article noted:

In today’s competitive healthcare market, many organizations are interested in making themselves “cutting-edge” institutions with the most advanced technological equipment and the very newest treatment and testing modalities. Doing so allows them to capture more of the healthcare market. Acquiring a surgical robot is in essence the entry fee into marketing an institution’s surgical specialties as “the most advanced.” It is not uncommon, for example, to see a photo of a surgical robot on the cover of a hospital’s marketing brochure and yet see no word mentioning robotic surgery inside.¹⁰³

Similarly, a 2014 article regarding the use of technology at rural hospitals noted that “[t]hroughout the country, hospital leaders are looking at ways they can strengthen their bottom line using technologies that better serve their communities and keep patients closer to home.”¹⁰⁴ This article discussed two rural Minnesota hospitals (Sanford Bemidji Medical Center (“SBMC”) and Essential Health-St. Joseph’s Medical Center) that have purchased da Vinci surgical robots, with Joy Johnson, Chief Operating Officer at SBMC, stating about the purchase: “Patients want robotic surgery because it means shorter hospital stays and faster recoveries for them. New physician surgical grads are trained in robotic surgery and they want to use those skills. If patient retention and physician recruitment are negatively impacted, that can impact a hospital’s bottom line.”¹⁰⁵

41. At deposition, Edward Harrich, Director of Surgical Services at Pullman Regional Hospital, testified that if “Pullman Regional did not have a da Vinci surgical robot” that it

¹⁰² Lee.

¹⁰³ Anthony R. Lanfranco, BAS, Andres E. Castellanos, MD, Jaydev P. Desai, PhD, and William C. Meyers, MD, “Robotic Surgery: A Current Perspective,” *Annals of Surgery*, Vol. 239, No. 1, January 2004, 14-21 at p. 19.

¹⁰⁴ Candi Helseth, “Technology Widens Care Options for Rural Hospitals,” *The Rural Monitor*, February 12, 2014 (hereafter “The Rural Monitor”).

¹⁰⁵ The Rural Monitor. Mr. Johnson further noted that “[p]atients want to stay close to home for care but they will travel long distances for best practice surgical options,” adding that “rural hospitals must be proactive technologically to maintain a solid bottom line.” See The Rural Monitor.

would lose customers.¹⁰⁶ As Intuitive noted along with an internal da Vinci marketing presentation: “Throughout the country, hospitals are looking to diversify their payor mix in an effort to attract or retain more commercially/privately insured patients. Premier data shows that for the core procedures, da Vinci surgery attracts more commercially insured patients compared to laparoscopic and open surgery.”¹⁰⁷

42. Furthermore, another non-clinical benefit to hospitals performing robot-assisted minimally invasive soft tissue surgeries is the impact doing so has on those hospitals’ overall surgeon recruitment and/or retention efforts. As noted in the same November 2018 Goldman Sachs report discussed above, “the rise of robotics has **significant implications for hospital recruitment** of new physicians as training on these technologies now begins in medical school.”¹⁰⁸ In an October 2020 op-ed, Eve Cunningham, MD, MBA, the Chief Medical Officer of Providence Medical Group, stated: “Mass exodus of surgeons or recruitment challenges are a risk if robots are restricted or removed from facilities.”¹⁰⁹

43. At deposition, Stacey Donovan of Evergreen Hospital testified:

Q. Does the fact that your hospital has da Vinci surgical robots help your hospital attract top surgeons?

A. Yes, it does.

Q. If your hospital no longer had any da Vinci surgical robots, would your hospital lose some top surgeons? [...]

THE WITNESS: Yes, we would.¹¹⁰

Similarly, Edward Harrich of Pullman Regional Hospital, testified that the “fact that [his] hospital has a da Vinci surgical robot help[s] [his] hospital attract top surgeons,” and further that there was a good chance losing its da Vinci robots would cause Pullman

¹⁰⁶ Harrich Deposition at 23:3-7.

¹⁰⁷ Intuitive-00001237-1311 at 1283.

¹⁰⁸ November 2018 Goldman Sachs Report at p. 10 (emphasis in original).

¹⁰⁹ Eve Cunningham, MD, MBA, “Op-Ed: Addressing Our Da Vinci Addiction – A call to action for everyone in healthcare,” MedPage Today, October 17, 2020 (hereafter “Cunningham”). Available at: <https://www.medpagetoday.com/surgery/generalsurgery/89175>.

¹¹⁰ Donovan Deposition at 15:7-16.

Hospital to lose surgeons (as it did once before prior to the time Pullman had plans to purchase its first da Vinci surgical robot).¹¹¹

44. Further, Intuitive itself noted in a May 2019 corporate marketing presentation that hospital decision makers believe that owning a da Vinci surgical robot “[e]nables hospitals to attract surgeons and their patients.”¹¹² In a set of notes emailed to Intuitive colleagues regarding a da Vinci marketing campaign, Suresh Sathyamurthy of Intuitive proposed informing “US Hospital Executives and Decision Makers (CEO, CFO)” that owning a da Vinci surgical robot “[a]ttracts surgeons to hospitals (and surgeons bring patients/procedures) to drive business (Aligns with Growth objectives for Hospital executives from decision maker study).”¹¹³ Another Intuitive internal marketing presentation included a slide that “shows the proliferation of da Vinci surgery in urology, gynecology, and general surgery resident / fellowship programs, and implies growing surgeon interest in having access to a da Vinci Surgical System,” adding: “Attracting physicians is among hospital CEOs’ top imperatives. As hospitals evaluate da Vinci surgery and opportunities to attract surgeons, they should consider the proliferation of da Vinci surgery in residency and fellowship programs where physicians are being exposed to robotic-assisted surgery.”¹¹⁴

45. The evidence discussed above demonstrates various other non-clinical benefits to hospitals that utilize MIST Surgical Robots compared to traditional laparoscopic surgery. This constitutes another piece of evidence demonstrating that traditional laparoscopic surgeries are not economic substitutes for minimally invasive soft tissue surgeries performed using MIST Surgical Robots and further that MIST Surgical Robots constitute a relevant antitrust product market.

¹¹¹ Harrich Deposition at 11:21-14:21, 51:18-24, 125:10-126:8.

¹¹² Intuitive-00073538-559 at 541.

¹¹³ Intuitive-00014395-96 at 95.

¹¹⁴ Intuitive-00001237-1311 at 1286. Intuitive further noted: “In the case of URO, 96% of hospitals with urology residency programs are performing da Vinci Surgery. As shown here, da Vinci surgery is being rapidly adopted by residencies and fellowships across specialties. A successful da Vinci surgery program can help attract top talent.” See Intuitive-00001237-1311 at 1286.

- ii. Non-MIST Surgical Robots are Not Economic Substitutes for MIST Surgical Robots and, Therefore, Cannot Be Substituted for MIST Surgical Robots in the Performance of Minimally Invasive Soft Tissue Surgeries

46. In addition to MIST Surgical Robots, other types of surgical robots have been approved by the FDA to perform a variety of different surgical procedures. For example, at deposition, Bob DeSantis, Executive Vice President and Chief Product Officer at Intuitive, identified other types of surgical robots in the U.S., including surgical robots that perform orthopedic, endoluminal, and cardiac procedures.¹¹⁵ Evidence I have reviewed demonstrates that non-MIST Surgical Robots such as these are not functional substitutes for MIST Surgical Robots, as they do not perform the same types of surgical procedures as MIST Surgical Robots. Given that these non-MIST Surgical Robots are not functional substitutes for MIST Surgical Robots, they therefore are not economic substitutes for MIST Surgical Robots either. Thus, these other types of surgical robots are not part of the relevant antitrust product market.

47. At deposition, Mr. DeSantis testified that orthopedic, endoluminal, and cardiac surgical robots “aren’t soft tissue surgical robots.”¹¹⁶ Mr. DeSantis further testified:

Q. Is it your understanding that robots that don’t perform any of the same procedures as the da Vinci robot are in direct competition with the da Vinci soft tissue surgical robot?

A. Today, if they’re not performing the same procedures that we are performing, I think that’s a fair statement. Then we’re not in competition, by definition.¹¹⁷

Mr. DeSantis further testified that there were no other surgical robots that have FDA clearance to perform all of the same surgical procedures as da Vinci in the United States.¹¹⁸ Mr. DeSantis also testified that the only FDA-approved robot that poses a

¹¹⁵ DeSantis Deposition at 38:15-39:19.

¹¹⁶ DeSantis Deposition at 38:15-39:22.

¹¹⁷ DeSantis Deposition at 78:17-24.

¹¹⁸ DeSantis Deposition at 78:25-79:21. See, also, Vavoso Deposition at 111:24-112:13. At his May 2021 deposition, Glenn Vavoso of Intuitive testified that there are only two other surgical robots that had FDA approval to perform minimally invasive soft tissue surgeries in the U.S.: TransEnterix’s Senhance surgical robot and Medrobotics’ Flex surgical robot. See Vavoso Deposition at 85:20-98:5. However, as I discuss in greater detail later in this Expert Report, neither of these surgical robots is FDA approved for all the same indications as Intuitive’s da Vinci surgical robot. See Vavoso Deposition at 98:18-113:15.

competitive threat is the TransEnterix Senhance.¹¹⁹ Glenn Vavoso of Intuitive similarly testified that there were no other FDA-approved surgical robots that performed all of the same surgical procedures as the da Vinci surgical robot.¹²⁰ Similarly, in a January 2019 email to colleagues responding to a question of who he thought “are considered competitors” of Intuitive, Larry Cesnik of Intuitive flagged a handful of surgical robot manufacturers from the list he was given, noting: “I believe the ones in red are not direct competitors, since they do not do SOFT TISSUE robotic surgery.”¹²¹

48. The evidence discussed above demonstrates that non-MIST Surgical Robots including the ones discussed above do not perform the same surgical procedures as MIST Surgical Robots such as da Vinci and, therefore, cannot be substituted for MIST Surgical Robots in the performance of minimally invasive soft tissue surgeries.¹²² Therefore, given that these non-MIST Surgical Robots are not functional substitutes for MIST Surgical Robots, it is not possible for them to be economic substitutes for MIST Surgical Robots in the performance of minimally invasive soft tissue surgeries. This constitutes another piece of evidence demonstrating that the tying market, the market for MIST Surgical Robots, constitutes a relevant antitrust product market.

B. The Relevant Antitrust Geographic Market with Regards to the Tying Market is the United States

49. As part of my analysis of Plaintiff’s claims with respect to the tying market, the market for MIST Surgical Robots, I have concluded that the relevant antitrust geographic market was the United States. I discuss the evidence that supports the basis for this conclusion in more detail below.

50. The U.S. Food & Drug Administration (“FDA”) is “responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices.”¹²³ The FDA states the following

¹¹⁹ DeSantis Deposition at 64:6-12.

¹²⁰ Vavoso Deposition at 102:7-106:6, 112:6-18.

¹²¹ Intuitive-00124485-87 at 85.

¹²² For example, Bob DeSantis of Intuitive testified that neither the Stryker Mako orthopedic robot nor the Johnson & Johnson endoluminal platform perform minimally invasive soft tissue surgeries. See DeSantis Deposition at 32:3-33:10.

¹²³ FDA, “What We Do.” Available at: <https://www.fda.gov/about-fda/what-we-do>.

regarding the sale of medical devices (such as robotically assisted surgical devices): “In the U.S., FDA regulates the sale of medical device products. Before a medical device can be legally sold in the U.S., the person or company that wants to sell the device must seek approval from the FDA. To gain approval, they must present evidence that the device is reasonably safe and effective for a particular use.”¹²⁴ In its 2021 Form 10-K, Intuitive states: “The FDA regulates the development, design, non-clinical and clinical research, manufacturing, safety, efficacy, labeling, packaging, storage, installation, recordkeeping, complaint and adverse event reporting, clearance, approval, certification, promotion, marketing, export, import distribution, and service of medical devices in the U.S. to ensure that medical devices distributed domestically are safe and effective for their intended uses.”¹²⁵ Thus, if a medical device, such as a surgical robot, does not have FDA clearance, it cannot be used for surgery in the United States. As Glenn Vavoso of Intuitive testified:

Q. For a robot to be used for a surgery in the United States, it needs to have FDA approval for the procedure it’s being used for, right? [...]

A. Yes.

Q. So to the extent that there’s robots for surgeries that exist outside of the United States, those can’t be used for surgeries inside the United States, right?

A. Without FDA approval, correct.¹²⁶

Thus, the fact that the sale of MIST Surgical Robots is regulated by the United States government, and that manufacturers outside of the United States cannot sell MIST Surgical Robots to hospitals in the United States without approval from the United States government, constitutes evidence demonstrating that the relevant antitrust geographic market is the United States.

51. The evidence discussed above demonstrates that the market for MIST Surgical Robots in the United States, the tying market in this matter, constitutes a relevant antitrust

¹²⁴ FDA, “FDA’s Role in Regulating Medical Devices” (hereafter “FDA’s Role in Regulating Medical Devices”). Available at: <https://www.fda.gov/medical-devices/home-use-devices/fdas-role-regulating-medical-devices>.

¹²⁵ Intuitive 2021 SEC Form 10-K at p. 15.

¹²⁶ Vavoso Deposition at 109:20-110:12.

market. In the next section of the Expert Report, I discuss how the EndoWrist Repair and Replacement Market in the United States, the tied market in the matter, also constitutes a distinct relevant antitrust market.

IV. The EndoWrist Repair and Replacement Market in the United States Constitutes a Relevant Antitrust Market

52. In the previous section I discussed evidence demonstrating that the tying market, the market for MIST Surgical Robots in the United States, constitutes a relevant antitrust market. As part of my analysis of Plaintiff's allegations in this matter, I also analyze the relevant antitrust market with respect to the tied market, which Plaintiff alleges was unlawfully tied to Intuitive's sales of da Vinci surgical robots. Based on my analysis of the documents and data produced in this litigation, as well as my training and experience in economics and my research and analysis into the market for the repair and replacement of EndoWrist surgical instruments, I have concluded that the EndoWrist Repair and Replacement Market constitutes a relevant antitrust product market that is distinct from the market for MIST Surgical Robots. I have also concluded that the United States constitutes the relevant antitrust geographic market with respect to the tied market for evaluating the impact of the Alleged Misconduct. I discuss my bases for these conclusions below.

A. The EndoWrist Repair and Replacement Market is a Relevant Antitrust Product Market

53. As I noted above, a relevant antitrust product market is comprised of the smallest possible set of goods for which a hypothetical monopolist could exercise market power to raise prices on that set of products by a small, but significant, amount without losing so much in sales volume that the increase in price is unprofitable.¹²⁷ Based on my research and analysis into the EndoWrist Repair and Replacement Market, and my training and experience in economics, I have determined that the EndoWrist Repair and Replacement

¹²⁷ As I explained, in general, an economic analysis of the relevant antitrust product market requires identifying "products that are close demand or supply substitutes." See Carlton and Perloff at p. 670. "Product B is a *demand substitute* for A if an increase in the price of A causes consumers to use more B instead. Product B is a *supply substitute* for A if, in response to an increase in the price of A, firms that are producing B switch some of their production facilities to the production of A." See Carlton and Perloff at p. 670 (emphasis in original). See, also, Horizontal Merger Guidelines at § 4.

Market constitutes a relevant antitrust product market. I base this conclusion on the fact that there are no functional substitutes for the repair and replacement of EndoWrist surgical instruments. Therefore, given that there are no functional substitutes for the repair and replacement of EndoWrist surgical instruments in the applications for which it is sold, it is not possible for there to be economic substitutes for the repair and replacement of EndoWrist surgical instruments. I discuss the evidence that forms the basis of this conclusion in greater detail below.

i. Third-Party Repairs of EndoWrist Surgical Instruments are Part of the Same Relevant Antitrust Product Market as Replacement EndoWrist Surgical Instruments Sold by Intuitive

54. Evidence I have reviewed demonstrates that third-party repairs of EndoWrist surgical instruments (such as those performed by SIS) were viewed by Intuitive and other market participants and analysts as a competitive threat to Intuitive's sales of replacement EndoWrist surgical instruments. For example, Deutsche Bank published an analyst report in February 2020 covering the "third party risk" to Intuitive's Instruments & Accessories business segment (which includes the sale of EndoWrist instruments) following a recent downgrade of Intuitive's stock in which it concluded:

We believe the Street continues to be overly dismissive of the risk of increasing usage of refurbished da Vinci instruments to Intuitive's top line over the next couple years. Given the abundance of first-hand confirmation from hospital customers that are exploring refurbished instruments, the question is not whether – but rather, how much – Intuitive's business will be impacted.¹²⁸

55. Deutsche Bank further noted that, based on its research, "FDA action to stymie usage of repaired instruments is highly unlikely," and that Intuitive's justification of its cease-and-desist letters to enforce its service agreements on "safety, regulatory, and

¹²⁸ DeSantis Deposition Exhibit 11 at Intuitive-00566055. Regarding how hospitals have been dealing with Intuitive's "pushback strategy" via its "advisement to cease and desist engagement with service providers," Deutsche Bank concluded: "Notably, some hospitals are now beginning to push back on restrictions embedded in their service contracts against third party servicing of da Vinci systems and instruments, questioning the legality and enforceability of such terms of service." See DeSantis Deposition Exhibit 11 at Intuitive-00566055. Deutsche Bank also identified the third-party repair of EndoWrist surgical instruments as a "competitive threat" to Intuitive's U.S. Instruments and Accessories business. See Intuitive-00552993-53014 at 52993.

legal/contractual grounds” are largely irrelevant.¹²⁹ Furthermore, Deutsche Bank estimated that, once repairs of EndoWrist instruments used with model X/Xi da Vinci robots become available, “Intuitive’s top line exposure will increase dramatically – rendering a majority (~58%) of segment sales ‘at risk’ of competitive pressures.”¹³⁰

56. Evidence I have reviewed demonstrates that Intuitive itself acknowledged that third-party repairs of EndoWrist surgical instruments (such as those performed by SIS) were a competitive threat to its sales of replacement EndoWrist surgical instruments. At deposition, Katie Scoville, Director of New Product Verification, Packaging, and Product Labeling at Intuitive, testified that the threat of “third-party EndoWrist refurbishers” would “be a factor in our sales numbers for certain third parties.”¹³¹

57. In a September 2016 internal analysis, Intuitive acknowledged the competitive threat from one such third-party repair company (Rebotix): “Despite the strong technology protections that ISI uses to limit the life of its instruments, there are companies that will attempt to hack that technology and extend instrument life beyond ISI’s specs. There is already one company in Florida (Rebotix) that claims to be able to extend instrument life and is currently attempting to qualify for a CE mark for the life-extended instruments.”¹³² In an internal analysis of options for pursuing a “Remanufactured Instruments” program, Intuitive notes as one of the “Pros” of one option that “Rebotix has potential to impact Si sales, an immediate threat.”¹³³ In an August 2019 analysis of third-party repairs of EndoWrist surgical instruments, Intuitive identified a number of third-party repairers as a competitive threat to their business, and also summarized “rebuttals” to Intuitive’s value proposition pertaining to one specific third-party repairer (Rebotix), as well as various responses to those rebuttals.¹³⁴

¹²⁹ DeSantis Deposition Exhibit 11 at Intuitive-00566057-066. See, also, Intuitive-00552993-53014 at 52997-52998.

¹³⁰ DeSantis Deposition Exhibit 11 at Intuitive-00566072. See, also, Intuitive-00552993-53014 at 53006.

¹³¹ Deposition of Katie Scoville, May 26, 2021 (hereafter “Scoville Deposition”) at 76:19-25. Ms. Scoville also testified that Intuitive “likely discussed revenue implications of third-party refurbishment.” See Scoville Deposition at 76:1-18.

¹³² Intuitive-00102938-989 at 952.

¹³³ Intuitive-00139149-150 at 150.

¹³⁴ Intuitive-00194074-089.

58. Relatedly, in November 2019, executives at Intuitive discussed the competitive threat posed by SIS upon learning that Marin General Hospital had been using EndoWrist instruments that had been repaired by SIS.¹³⁵ In reporting this finding, Erin Grinberg of Intuitive noted that Marin General Hospital was “very proud of this and celebrated the cost savings.”¹³⁶ In devising a plan for how to respond to the competitive threat posed by SIS at Marin General Hospital,¹³⁷ Dan Jones of Intuitive noted that “[t]here is a close match between the ‘SIS’ materials and the documents we’d seen earlier from Rebotix.”¹³⁸ Similarly, in September 2019, Intuitive executives discussed how to deal with an inquiry from University of Florida Health Shands (“UF Shands”) regarding the use of SIS’s services to save money by repairing its EndoWrist instruments.¹³⁹ UF Shands had been alerted to the cost savings by its Group Purchasing Organization, which noted:

Two of [its] members, Kaiser Permanente and Legacy Health System are capturing savings by using Intuitive Surgical Endowrist refurbishment products. Surgical Instrument Service Company (SIS) is now the only supplier providing refurbishment to Intuitive Surgical’s da Vinci EndoWrist.¹⁴⁰

¹³⁵ Intuitive-00049108-112.

¹³⁶ Intuitive-00049108-112 at 112.

¹³⁷ As part of this response, Adam Clark of Intuitive noted that it was “important for MG to understand that we will be canceling their SLA in short order if this keeps happening.” See Intuitive-00110473-0478 at 74.

¹³⁸ Intuitive-00049108-112 at 108. Evidence I have reviewed indicates that SIS itself did not perform repairs on EndoWrist instruments on behalf of its hospital customers; rather, it acted as a distributor of such repair services performed by other third-party repairers. See, for example, 30(b)(6) Deposition of Greg Posdal, November 1, 2022 (hereafter “30(b)(6) Posdal Deposition”) at 21:16-22:12, 47:4-50:14. Chris Gibson of Rebotix described Rebotix’s relationship with SIS in the following way: “SIS has been a longtime customer of Benjamin Biomedical. And as I discussed before, that we utilized our distributor base of Benjamin Biomedical to offer the repair service that Rebotix Repairs was offering, and so we engaged SIS to begin selling the Rebotix Repair repair process and service to their customers, which are the end-user hospitals.” See Deposition of Chris Gibson, June 22, 2021 at 158:1-9. Similarly, as Greg Posdal of SIS testified regarding Rebotix: “they actually performed the work for us. We picked it up, sent it to them, and they did the repairs.” See Deposition of Greg Posdal, May 10, 2021 (hereafter “Posdal Deposition”) at 30:17-31:10. Thus, the evidence discussed throughout this Expert Report regarding how Intuitive’s exclusionary conduct prevented Rebotix from competing effectively in the EndoWrist Repair and Replacement Market is also applicable to SIS’s efforts to compete effectively in the EndoWrist Repair and Replacement Market. See, for example, 30(b)(6) Deposition of Keith Robert Johnson, October 27, 2022 (hereafter “Johnson Deposition”) at 17:22-20:1.

¹³⁹ Intuitive-00110252-54.

¹⁴⁰ Intuitive-00110252-54 at 54. UF Shands was further informed that Kaiser Permanente and Legacy Health system achieved an approximately 40 percent savings by having SIS repair EndoWrist instruments. See Intuitive-00110252-54 at 54.

59. The evidence discussed above demonstrates that third-party repairs of EndoWrist surgical instruments were viewed as a competitive threat to Intuitive's sales of replacement EndoWrist surgical instruments. This constitutes one piece of evidence demonstrating that third-party repairs of EndoWrist surgical instruments are part of the same relevant antitrust product market as replacement EndoWrist surgical instruments sold by Intuitive.

ii. Intuitive Considered Selling Refurbished Endowrist Instruments to Make it More Difficult for Third-Party Repair Companies To Compete Effectively in the EndoWrist Repair and Replacement Market

60. Evidence I have reviewed in the form of Intuitive's own conduct in response to the competitive threat posed by third-party repairs of EndoWrist surgical instruments provides additional evidence that third-party repairs of EndoWrist surgical instruments are part of the same relevant antitrust product market as replacement EndoWrist surgical instruments sold by Intuitive. For example, evidence demonstrates that, in response to the growing competitive threat from lower priced third-party repairers of EndoWrist surgical instruments, Intuitive investigated the possibility of selling refurbished EndoWrist surgical instruments at a discount off of the cost of replacement EndoWrists. For example, beginning in 2017, Intuitive began exploring the possibility of offering refurbished EndoWrist surgical instruments to some hospitals at a discount off of its new, replacement EndoWrist surgical instruments.¹⁴¹ In a January 2017 presentation, Intuitive described the program, often referred to internally as Project Dragon, in the following way: "Collection of expired *EndoWrist* Instruments at the hospital, return to Intuitive Surgical, and receive a refurbished instrument at a lower cost compared to new."¹⁴² The "Economic Benefits" of the proposed program included "[r]educed per procedure cost;" "[c]ost flexibility options to the surgeon and hospital;" and "[r]educe[d] cost of disposable at the hospital."¹⁴³

¹⁴¹ DeSantis Deposition at 226:23-227:4, Exhibit 33.

¹⁴² DeSantis Deposition Exhibit 33 at Intuitive-00042945 (emphasis in original).

¹⁴³ DeSantis Deposition Exhibit 33 at Intuitive-00042946. See, also, DeSantis Deposition Exhibit 38 at Intuitive-00273265.

61. In a May 2017 internal marketing team update regarding Project Dragon, Intuitive included several “[d]efensive revenue and margin protection” “Company Objectives” for the project, including: “Displace non-validated 3rd party re-programmers where already present,” as well as “increase entry barriers for other 3rd party re-programmers.”¹⁴⁴ At deposition, Katie Scoville, Director of New Product Verification, Packaging, and Product Labeling at Intuitive, acknowledged that it was one of Intuitive’s “goals” as part of Project Dragon to “displace nonvalidated third-party reprogrammers where already present.”¹⁴⁵ Ms. Scoville also testified that one “side effect” of Project Dragon was the creation of “entry barriers for third-party reprogrammers,” and that such a “side effect” would be “advantageous [to Intuitive] to increase entry barriers.”¹⁴⁶ In a 2017 internal presentation analyzing the “Benefits of Secondary Markets” for EndoWrist surgical instruments for both Intuitive and users (hospitals), Intuitive noted that “[m]arket data shows that remanufacturing is only 5% of a given [Instrument & Accessories] market segment,” and therefore if “only 5% of accounts are interested in Dragon then 95% of accounts remain exposed to third party collection companies.”¹⁴⁷

62. Evidence indicates that in August 2017, Intuitive initially decided not to pursue Project Dragon and offer refurbished EndoWrist surgical instruments to hospitals at a lower cost than replacement EndoWrist surgical instruments.¹⁴⁸ I discuss Intuitive’s decision not to pursue its refurbished EndoWrist instrument program in greater detail later in this Expert Report.

63. The evidence discussed above demonstrates that third-party repairs of EndoWrist surgical instruments are part of the same relevant antitrust product market as replacement EndoWrist surgical instruments sold by Intuitive. In the next section I discuss evidence

¹⁴⁴ DeSantis Deposition Exhibit 37 at Intuitive-00273261. At deposition, Bob DeSantis of Intuitive acknowledged that offering refurbished EndoWrist surgical instruments would allow Intuitive to compete with, and “increase entry barriers for third-party re-programmers.” See DeSantis Deposition at 254:19-24.

¹⁴⁵ Scoville Deposition at 85:10-23, Exhibit 6 at Intuitive-00273267.

¹⁴⁶ Scoville Deposition at 86:18-87:24, Exhibit 6 at Intuitive-00273267.

¹⁴⁷ DeSantis Deposition Exhibit 38 at Intuitive-00273269.

¹⁴⁸ Intuitive-00601672-75 at 72. Project Dragon ultimately ended in the second quarter of 2020, and Intuitive is not actively pursuing the possibility of offering refurbished EndoWrist surgical instruments to hospitals at a lower cost than replacement EndoWrist surgical instruments. See Scoville Deposition at 12:11-13:15, 91:24-92:3. See, also, Individual & 30(b)(6) Deposition of Nicky Goodson, October 27, 2022 (hereafter “Goodson Deposition”) at 72:5-74:3.

demonstrating that there are no functional substitutes for the repair and replacement of EndoWrist surgical instruments, thus further demonstrating that the EndoWrist Repair and Replacement Market constitutes a relevant antitrust product market.

- iii. Neither Traditional Laparoscopic Surgical Instruments, nor Surgical Instruments Used with Any Other Non-MIST Surgical Robots, are Compatible with Da Vinci Surgical Robots

64. Another form of evidence demonstrating that the EndoWrist Repair and Replacement Market constitutes a relevant antitrust product market is the fact that neither traditional laparoscopic surgical instruments, nor surgical instruments used with any other non-MIST Surgical Robots, are compatible with da Vinci surgical robots. First off, evidence I have reviewed indicates that all of Intuitive's EndoWrist surgical instruments have been approved by the FDA for use with a da Vinci surgical robot in a MIST surgical procedure.¹⁴⁹ However, evidence indicates that no other manufacturers sell FDA-approved surgical instruments for use with a da Vinci surgical robot in a MIST surgical procedure. For example, Bob DeSantis of Intuitive testified that there was no other "manufacturer in the United States that sells instruments that can be attached to the da Vinci robot and used for minimally invasive surgery."¹⁵⁰ Similarly, Glenn Vavoso, Senior Vice President and General Manager for Asia and Indirect Global markets at Intuitive, testified that there are no other companies other than Intuitive from which hospitals that own a da Vinci surgical robot can purchase surgical instruments that work with a da Vinci surgical robot.¹⁵¹

65. Furthermore, evidence I have reviewed demonstrates that Intuitive specifically designed its da Vinci surgical robots to only work with its own EndoWrist surgical instruments and, thus, no other surgical instruments (such as traditional laparoscopic surgical instruments) could be used in a da Vinci MIST surgical procedure in place of EndoWrist surgical instruments.¹⁵² Mr. DeSantis testified:

¹⁴⁹ See, for example, Intuitive-00552993-53014 at 52998.

¹⁵⁰ DeSantis Deposition at 25:1-19.

¹⁵¹ Vavoso Deposition at 57:17-59:14, 244:7-10.

¹⁵² In its 2004 Form 10-K, Intuitive described its EndoWrist surgical instruments as "'smart disposables' because they are resterilizable and reusable for a defined number of procedures. A custom computer chip inside each instrument performs several functions that help determine how the system and instruments

Q. [...] Is it your understanding that Intuitive designed the da Vinci robots to only function with instruments that are produced by Intuitive?

A. Yes.

Q. And that was an intentional design decision; right?

A. Absolutely.¹⁵³

Mr. DeSantis also noted that the portfolio of patents Intuitive holds regarding the development of surgical instruments for use with the da Vinci surgical robot would make it difficult for another company to manufacture surgical instruments that would be compatible (and work “cleanly”) with the da Vinci surgical robot.¹⁵⁴

66. Furthermore, additional evidence I have reviewed demonstrates that traditional laparoscopic surgical instruments cannot be attached to a da Vinci surgical robot for use in a MIST surgical procedure. For example, at deposition, Bob DeSantis of Intuitive testified that neither traditional laparoscopic surgical instruments, nor surgical instruments designed for other surgical robots, can be attached to the da Vinci surgical robot.¹⁵⁵ Glenn Vavoso of Intuitive similarly testified that traditional laparoscopic surgical instruments cannot be attached to the da Vinci surgical robot for use in a MIST robotic surgery.¹⁵⁶ Since traditional laparoscopic surgical instruments cannot be attached to a da Vinci surgical robot for use in a MIST surgical procedure, they are therefore not a functional substitute for the repair and replacement of EndoWrist surgical instruments for use in MIST robotic surgeries.

67. The evidence discussed above demonstrates that there are no viable surgical instrument alternatives to the repair and replacement of EndoWrist surgical instruments for use with the da Vinci surgical robot. Given that traditional laparoscopic surgical

work together. When an *EndoWrist* instrument is attached to an arm of the patient-side cart, the chip performs an ‘electronic handshake’ that ensures the instrument was manufactured by us and recognizes the type and function of the instrument and number of past uses. For example, the chip distinguishes between scissors and a scalpel and controls the unique functions of different instruments as appropriate. In addition, the chip will not allow the instrument to be used for more than the prescribed number of procedures so that its performance meets specifications during each procedure.” See Intuitive Surgical, Inc., SEC Form 10-K, filed March 16, 2005 at p. 7.

¹⁵³ DeSantis Deposition at 23:21-24:4. See, also, DeSantis Deposition at 27:5-8.

¹⁵⁴ DeSantis Deposition at 25:20-27:4.

¹⁵⁵ DeSantis Deposition at 139:22-140:9.

¹⁵⁶ Vavoso Deposition at 53:17-55:16.

instruments, as well as surgical instruments used with any other non-MIST Surgical Robots, are not functional substitutes for the repair and replacement of EndoWrist surgical instruments, they therefore are not economic substitutes for the repair and replacement of EndoWrist surgical instruments either. This is, therefore, another form of evidence demonstrating that the tied market (the EndoWrist Repair and Replacement Market) constitutes a relevant antitrust product market.

B. The Relevant Antitrust Geographic Market with Regards to the Tied Market is the United States

68. As part of my analysis of Plaintiff's claims with respect to the tied market, EndoWrist Repair and Replacement Market, I have concluded that the relevant antitrust geographic market was the United States. I discuss the evidence that supports the basis for this conclusion in more detail below.

69. Evidence I have reviewed indicates that Intuitive's EndoWrist surgical instruments are classified as Class II medical devices.¹⁵⁷ According to Intuitive, "Class II medical devices are those which are subject to general controls, and most require premarket demonstration of adherence to certain performance standards or other special controls, as specified by the FDA, and special controls as deemed necessary by the FDA to ensure the safety and effectiveness of the device."¹⁵⁸ Thus, the fact that the sale of EndoWrist surgical instruments is regulated by the United States government constitutes evidence demonstrating that the relevant antitrust geographic market with regards to the tied market is the United States. Further, while third-party repairs of EndoWrist surgical instruments (such as those performed by SIS) do not require approval from the FDA,¹⁵⁹ evidence indicates that these third-party repairers operate on a national basis. For example, one market research report I have reviewed noted that, as "a service industry, the Medical Equipment Repair and Maintenance Services industry does not participate in

¹⁵⁷ Intuitive 2021 SEC Form 10-K at p. 15.

¹⁵⁸ Intuitive 2021 SEC Form 10-K at p. 15. Intuitive also noted that its "current products are subject to premarket notification and clearance under section 510(k) of the FFDCA." See Intuitive 2021 SEC Form 10-K at p. 15.

¹⁵⁹ Scoville Deposition at 51:25-53:3; DeSantis Deposition Exhibit 11 at Intuitive-00566055, 6057, 6059, 6064-6065; Deposition of Bob Overmars, June 15, 2021 (hereafter "Overmars Deposition") at 96:9-97:3.

international trade.”¹⁶⁰ Consistent with this, evidence indicates that SIS is a “national company” that works with hospitals in the U.S.¹⁶¹ Thus, the fact that third-party repairers of EndoWrist surgical instruments operated on a national basis is further evidence that the relevant antitrust geographic market with respect to the tied market is the United States.

C. The EndoWrist Repair and Replacement Market is Distinct from the Market for MIST Surgical Robots

70. Earlier in this Expert Report I discussed evidence demonstrating that the tied market (the EndoWrist Repair and Replacement Market) and the tying market (the market for MIST Surgical Robots) each constitute relevant antitrust product markets. Additional evidence I have reviewed demonstrates that MIST Surgical Robots and EndoWrist surgical instruments are separate, distinct products that are inputs into the same product. Thus, the EndoWrist Repair and Replacement Market is distinct from the market for MIST Surgical Robots.

71. In the context of a tying arrangement, courts have held that products are considered distinct if there is sufficient demand for the tied product separate from the tying product.¹⁶² Evidence I have reviewed demonstrates that hospital demand for EndoWrist surgical instruments is separate and distinct from demand for da Vinci surgical robots. For example, after a hospital first purchases a da Vinci surgical robot, it must then continue to purchase EndoWrist surgical instruments on a recurring basis in order to use its new da Vinci surgical robot.¹⁶³ After a hospital has made the decision to purchase a da Vinci surgical robot, it then makes distinct, separate decisions on the replacement (or repair) of EndoWrist surgical instrument purchases, including how many EndoWrists to buy and what type of EndoWrists to buy, and, in a world free of Intuitive’s anticompetitive conduct, whether to repair or replace those surgical instruments. Ongoing purchases of EndoWrists are distinct from the purchase of the da Vinci surgical

¹⁶⁰ Jack Curran, “Medical Equipment Repair & Maintenance Services,” *IBISWorld*, June 2020 at p. 23.

¹⁶¹ See, for example, 30(b)(6) Johnson Deposition at 32:16-33:8.

¹⁶² U.S. Supreme Court, *Jefferson Parish Hospital District No. 2 et al. v. Hyde*, 466 U.S., No. 82-1031, March 27, 1984 (hereafter “Jefferson Parish”).

¹⁶³ Vavoso Deposition at 50:20-51:2.

robot; a hospital does not buy a new MIST Surgical Robot for each surgical procedure, for every ten surgical procedures,¹⁶⁴ or every time it replaces or repairs the EndoWrist surgical instruments used in those surgeries.¹⁶⁵ And, as I discuss in greater detail below, depending on the types of surgeries typically performed at a given hospital, hospitals will have demand that covers different mixes of EndoWrist surgical instruments.

72. Further, to determine whether there is sufficient demand for the tied product that is distinct from demand for the tying products, courts have looked to actual market practices outside of the tying arrangement to determine if customers exhibited a preference for purchasing the tied product separately from the tying product.¹⁶⁶ Later in this Expert Report I discuss extensive evidence demonstrating that, absent Intuitive's tying of the purchase of da Vinci robots from Intuitive to the purchase of replacement EndoWrist surgical instruments exclusively from Intuitive, at least some hospitals would have preferred having their EndoWrist surgical instruments repaired by third-party repairers (such as SIS) at a lower cost than purchasing replacement EndoWrist surgical instruments from Intuitive. For example, regarding the repair services of another third-party repairer similar to SIS (Rebotix), Edward Harrich of Pullman Regional Hospital testified:

Q. If it weren't for Intuitive's contractual limitations, would your hospital use Rebotix's services to the full extent that Rebotix was willing to provide them?

A. Yes.¹⁶⁷

73. Additional evidence that I have reviewed demonstrating that MIST Surgical Robots and EndoWrist surgical instruments are distinct products includes the fact that these products are not typically sold in fixed proportions. Rather, hospital demand for the two products is distinct. For example, after purchasing a da Vinci surgical robot, hospitals' continued purchases of EndoWrist surgical instruments are not made in fixed

¹⁶⁴ Evidence indicates that EndoWrist surgical instruments are typically designed to have ten uses before expiration. See, for example, DeSantis Deposition at 137:20-138:6; Intuitive 2021 SEC Form 10-K at pp. 8, 58. I understand that in October 2020, Intuitive introduced its Extended Use Program that allowed select da Vinci Xi and da Vinci X EndoWrist surgical instruments to be used twelve to 18 times, as compared to the typical ten uses. See Intuitive 2021 SEC Form 10-K at pp. 8, 58.

¹⁶⁵ Vavoso Deposition at 51:3-51:9.

¹⁶⁶ Jefferson Parish.

¹⁶⁷ Harrich Deposition at 62:6-10.

proportion to the da Vinci surgical robots it purchases; rather, its continued EndoWrist surgical instrument purchases will be based on the frequency at which it uses its da Vinci surgical robot, or the frequency at which it uses certain types of EndoWrist surgical instruments as compared to other types of EndoWrist surgical instruments.¹⁶⁸ Therefore, the fact that hospitals do not purchase MIST Surgical Robots (such as Intuitive's da Vinci) and EndoWrist surgical instruments in fixed proportions (rather, hospital demand for these products is distinct from one another) constitutes one piece of evidence demonstrating that the EndoWrist Repair and Replacement Market is distinct from the market for MIST Surgical Robots.

74. In addition to this evidence, Intuitive itself identifies its da Vinci surgical robots and its EndoWrist surgical instruments as separate products that it offers to customers. For instance, one of the "Products" categorizations Intuitive identifies in its 2021 Form 10-K is "da Vinci Surgical systems."¹⁶⁹ The sub-categories Intuitive lists under its da Vinci Surgical Systems product category include: Surgeon's Console, Patient-Side Cart, 3DHD Vision System, Firefly Fluorescence Imaging, and da Vinci Xi Integrated Table Motion.¹⁷⁰ Notably, Intuitive does not include its EndoWrist surgical instruments under the same product category as its da Vinci surgical robot; rather, Intuitive lists its EndoWrist surgical instruments under its "Instruments and Accessories" product category.¹⁷¹ Intuitive recognizes that the EndoWrist surgical instruments used in combination with its da Vinci surgical robots are not part of the same product as the da Vinci surgical robot.

75. Further to this point, I have noted that, in its financial statements, Intuitive categorizes and reports revenue for its da Vinci surgical robots and EndoWrist surgical instruments separately.¹⁷² This is consistent with the fact that the revenue streams earned by Intuitive for these products are distinct. For example, as Intuitive noted in its 2021

¹⁶⁸ For example, a hospital that specializes in Mitral Valve Repair may purchase Valve Hook at a high frequency, whereas a hospital that specializes in Nephrectomy may purchase Dual Blade Retractor. See Intuitive Surgical, "EndoWrist/Single-Site Instrument & Accessory Catalog," May 2014 at p. 3. Available at: https://www.intuitivesurgical.com/products/871145_Instrument_Accessory_%20Catalog.pdf.

¹⁶⁹ Intuitive 2021 SEC Form 10-K at p. 6.

¹⁷⁰ Intuitive 2021 SEC Form 10-K at pp. 6-7.

¹⁷¹ Intuitive 2021 SEC Form 10-K at pp. 7-8.

¹⁷² See, for example, Intuitive 2021 SEC Form 10-K at pp. 68-70.

Form 10-K, the majority of da Vinci surgical robots are sold via sales arrangements with hospitals where “revenue is recognized up-front,” and “represents a significant capital equipment investment for [its] customers when purchased.”¹⁷³ Conversely, EndoWrist surgical instruments generate a “recurring revenue” stream for Intuitive since these surgical instruments “have limited lives and will either expire or wear out as they are used in surgery, at which point they need to be replaced,” leading “customers [to] place orders to replenish their supplies of instruments and accessories on a regular basis.”¹⁷⁴ Thus, the fact that hospitals’ purchases of da Vinci surgical robots represent a large capital investment for hospitals, while their required recurring purchases of EndoWrist surgical instruments represent an ongoing operating expense, is further indicative that MIST Surgical Robots (such as Intuitive’s da Vinci) and EndoWrist surgical instruments are not part of the same relevant antitrust product market.

76. Furthermore, Intuitive acknowledges the differences in the sales cycles it engages in with hospitals when selling da Vinci surgical robots and EndoWrist surgical instruments. For example, Intuitive notes that the “initial system sale into an account is a major capital equipment purchase by our customers and typically has a lengthy sales cycle that can be affected by macroeconomic factors, capital spending prioritization, timing of budgeting cycles, and competitive bidding processes.”¹⁷⁵ However, hospitals’ required purchases of the EndoWrist surgical instruments that complement their da Vinci surgical robots are made on a “regular basis” as per the terms of the sales agreement they sign at the time they purchase their da Vinci surgical robot, and “[o]rders received are typically shipped within one business day.”¹⁷⁶

¹⁷³ Intuitive 2021 SEC Form 10-K at p. 58.

¹⁷⁴ Intuitive 2021 SEC Form 10-K at pp. 13, 58-59. Intuitive noted that a “large portion of our revenue is generated through our sales of instruments and accessories.” See 2021 Intuitive SEC Form 10-K at p. 35. In the U.S. in 2021, Intuitive’s Instruments and Accessories products (which includes EndoWrist surgical instruments) accounted for approximately 58 percent of Intuitive’s overall revenue. See 2021 Intuitive SEC Form 10-K at p. 102. I understand that approximately one third of da Vinci surgical robots are sold to hospitals in operating lease transactions where revenue is recognized over time and for some of these lease agreements, customers are “provided with the right to purchase the leased system at certain points during and/or at the end of the lease term.” Intuitive 2021 SEC Form 10-K at pp. 57-60, 69.

¹⁷⁵ Intuitive 2021 SEC Form 10-K at p. 13.

¹⁷⁶ Intuitive 2021 SEC Form 10-K at p. 13.

77. The evidence discussed above demonstrates that MIST Surgical Robots and EndoWrist surgical instruments are separate, distinct products, and that the EndoWrist Repair and Replacement Market is distinct from the market for MIST Surgical Robots.

V. Evidence Demonstrates that the Alleged Misconduct was Anticompetitive

78. As I discussed above, I understand Plaintiff alleges that “Intuitive has gone to extraordinary efforts to leverage its monopoly power in robots for use in minimally invasive soft tissue surgery, the repair and support of those robotic systems, and its monopoly power in instruments for use with such robots to foreclose aftermarket repair of those instruments by any competitors,” and that an “effect of Intuitive’s anticompetitive conduct is to generate and sustain unreasonably high, supra-competitive prices for aftermarket EndoWrist instruments.”¹⁷⁷ I understand one aspect of Defendant’s alleged anticompetitive conduct in this regard includes a standard sales and service agreement that Intuitive required all purchasers of its da Vinci surgical robots to agree to that both expressly “demands that customers further agree to a limited license for the use of EndoWrist instruments,” which “expires once an EndoWrist instrument is used up to its maximum number of uses as specified in the documentation accompanying the particular instrument,”¹⁷⁸ and “prohibits customers from engaging any unauthorized third party to repair, refurbish, or recondition EndoWrist instruments, whether before or after the limited use license has expired.”¹⁷⁹ I further understand that Plaintiff alleges that, as part of its alleged misconduct, Intuitive routinely “sent letters to and had in-person conversations with SIS’s customers or potential customers, knowing that they were under

¹⁷⁷ Complaint at ¶¶87, 110. “Intuitive leverages its market power in the worldwide and domestic markets for the sale of surgical robots used in minimally invasive soft tissue surgery, and the market for repair services for their robots, to pressure customers to use supra-competitively priced replacement EndoWrist parts.” See Complaint at ¶65.

¹⁷⁸ Complaint at ¶4. I understand Plaintiff alleges that “EndoWrists also include an internal memory chip” which “counts the number of times the EndoWrist is attached to a da Vinci robot arm, not an actual measure of usage such as usage time, number of movements, or actuation time.” See Complaint at ¶¶30-31. Further, I understand that Plaintiff alleges that the “da Vinci robot system queries the memory chip prior to performing any operations with the particular EndoWrist instrument. After a certain number of uses, usually limited to ten, the EndoWrist instrument is rendered non-operational, based solely on the number of times it is attached to the da Vinci robot arm, without any regard to the actual underlying physical condition of the EndoWrist instrument. Without the services of providers such as SIS, the hospital has no choice but to buy a brand-new replacement EndoWrist instrument from Intuitive at full price.” See Complaint at ¶32.

¹⁷⁹ Complaint at ¶4.

contract or in contractual negotiations for repaired EndoWrists. As a result of the threats and misleading statements in those letters and conversations, all of SIS's EndoWrists customers backed out of their contracts or did not sign contracts under negotiation, effectively eviscerating SIS's EndoWrist repair business."¹⁸⁰ Based on my analysis of the documents and data produced in this litigation, as well as my training and experience in economics and my research and analysis into the relevant antitrust markets at issue here, I have concluded that Intuitive's Alleged Misconduct was anticompetitive because it resulted in higher prices for products in the (tied) market than otherwise would have prevailed.

79. According to one standard textbook on antitrust, exclusionary conduct on the part of a firm (such as the kind being alleged by Plaintiff in this matter) is considered to be anticompetitive if (i) the firm maintains significant monopoly power (such as Plaintiffs allege Intuitive did in the tying market, the market for MIST Surgical Robots); (ii) the exclusionary conduct limits potential new entry and effective competition from significant rivals (as Plaintiffs allege was the case here in that SIS was forestalled from competing effectively in the tied market, the EndoWrist Repair and Replacement Market); and (iii) the exclusionary conduct results in lower market output to customers, or higher prices paid by customers (as Plaintiffs allege was the case here in that hospitals paid more to replace their EndoWrist instruments than they otherwise would have had the option to repair those instruments through third-party repairers such as SIS been available to them).¹⁸¹ Evidence I have reviewed demonstrates that Intuitive's Alleged Misconduct

¹⁸⁰ Complaint at ¶92. "Intuitive's letters make its threats explicit—if the hospital uses repaired instruments, Intuitive will render its surgical robot inoperable. Not only will Intuitive seek damages or indemnity from its customer, but if Intuitive discovers 'Systems being used with instruments by an unauthorized third party, Intuitive may no longer accept your service calls for such Systems.' Because Intuitive also refuses to allow any competition in the market for service of its robots, and refuses to make error codes and other critical information available to third parties, failure to provide such service will render a robot that originally cost well over a million dollars inoperable. Many hospitals have multiple such robots that would thus be rendered inoperable. [...] Again, the threat is explicit—if the hospital uses refurbished instruments, Intuitive will render its surgical robot inoperable." See Complaint at ¶¶102-103. Further, in "private conversations, Intuitive representatives have made this threat even more explicit. In response to one hospital's use of third-party repair services, an Intuitive representative stated that Intuitive would turn the surgical robot into a 'paperweight.'" See Complaint at ¶104.

¹⁸¹ Herbert Hovenkamp, *The Antitrust Enterprise*, Cambridge, MA: Harvard University Press, 2005 (hereafter "Hovenkamp, *The Antitrust Enterprise*") at p. 206. The DOJ stated the following regarding circumstances in which exclusive dealing can be considered anticompetitive: "exclusive dealing may allow one manufacturer, in effect, to monopolize efficient distribution services and thereby prevent its rivals from

was anticompetitive. I discuss the evidence that forms the bases for this opinion in more detail below.

A. Intuitive Posessed Monopoly Power in the Market for MIST Surgical Robots in the United States During the Relevant Period

80. As I previously discussed, the first step in determining whether exclusionary conduct on the part of a given firm is anticompetitive is whether that firm maintains significant monopoly power.¹⁸² “Monopoly power” refers to the ability of a single firm to persistently charge a price that is significantly higher than the competitive price.¹⁸³ Although the existence of monopoly power is not, by itself, anticompetitive, a firm that engages in exclusionary conduct in an attempt to maintain monopoly power inhibits the competitive process and harms competition. According to the DOJ:

Monopoly power is conventionally demonstrated by showing that both (1) the firm has (or in the case of attempted monopolization, has a dangerous probability of attaining) a high share of a relevant market and (2) there are entry barriers – perhaps ones created by the firm’s conduct itself – that permit the firm to exercise substantial market power for an appreciable period.¹⁸⁴

81. In the present matter, Plaintiff alleges that Intuitive used its monopoly power in the market for MIST Surgical Robots to foreclose competition in the EndoWrist Repair and Replacement Market by tying the purchase of da Vinci robots from Intuitive to the purchase of replacement EndoWrist surgical instruments exclusively from Intuitive, thus preventing customers from repairing their EndoWrist surgical instruments through companies such as SIS at a lower cost. Economists typically define the tying of products as occurring when a seller sells a product under the condition that a buyer also purchase a second (tied) product.¹⁸⁵ As Judge Richard Posner described, “the traditional objection to

competing effectively. [...] [E]xclusive dealing can harm consumers by thwarting entry or inhibiting growth of existing rivals.” See United States Department of Justice, *Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act*, 2008 (hereafter “DOJ Single-Firm Conduct”) at p. 131.

¹⁸² Hovenkamp, *The Antitrust Enterprise* at p. 206.

¹⁸³ DOJ Single-Firm Conduct at pp. 19-20.

¹⁸⁴ DOJ Single-Firm Conduct at p. 21.

¹⁸⁵ Nicholas Economides, “Tying, bundling, and loyalty/requirement rebates,” *Research Handbook on the Economics of Antitrust Law*, Einer Elhauge (Ed.), Edward Elgar, 2012 (hereafter “Economides”) 121-143 at p. 121.

tying arrangements is that they enable a firm having a monopoly in one market to obtain a monopoly in a second one.”¹⁸⁶ This is typically referred to as the “leverage” theory.¹⁸⁷ Tying arrangements can be used by a monopolist in the tying market to foreclose rivals in the tied product market if a “substantial share of the tied product market is foreclosed.”¹⁸⁸

82. It is my opinion, based on evidence I have reviewed, that Intuitive possessed monopoly power in the market for MIST Surgical Robots during the Relevant Period, which provided Intuitive necessary leverage to foreclose competition and maintain its monopoly in the EndoWrist Repair and Replacement Market. I discuss the evidence that forms the bases for this opinion in more detail below.

i. Intuitive Dominated the Market for MIST Surgical Robots in the United States During the Relevant Period

83. According to the DOJ, “courts typically have required a dominant market share before inferring the existence of monopoly power.”¹⁸⁹ Evidence I have reviewed demonstrates that Intuitive dominated the market for MIST Surgical Robots during the Relevant Period. For example, a September 2019 Bernstein Research analyst report covering Intuitive and potential competition noted that “Intuitive has held a monopoly position [in the market for surgical robots] for the last two decades.”¹⁹⁰ A September

¹⁸⁶ Richard A. Posner, *Antitrust Law*. Second Edition, Chicago, IL: The University of Chicago Press, 2001 (hereafter “Posner”) at p. 197.

¹⁸⁷ Posner at p. 198.

¹⁸⁸ Economides at p. 130.

¹⁸⁹ DOJ Single-Firm Conduct at p. 21. According to the DOJ: “The Fifth Circuit observed that ‘monopolization is rarely found when the defendant’s share of the relevant market is below 70%.’ Similarly, the Tenth Circuit noted that to establish ‘monopoly power, lower courts generally require a minimum market share of between 70% and 80%.’ Likewise, the Third Circuit stated that ‘a share significantly larger than 55% has been required to establish prima facie market power’ and held that a market share between seventy-five percent and eighty percent of sales is ‘more than adequate to establish a prima facie case of power.’” See DOJ Single-Firm Conduct at p. 21. The DOJ also noted that the “Eleventh Circuit held that a ‘market share at or less than 50% is inadequate as a matter of law to constitute monopoly power.’” See DOJ Single-Firm Conduct at pp. 21-22.

¹⁹⁰ DeSantis Deposition Exhibit 8 at Intuitive-00278221. Similarly, a March 2020 article regarding the robotic surgery market noted: “Intuitive Surgical, manufacturer of the da Vinci Surgical System, has been the uncontested market leader in robotic general surgery for the last two decades. [...] Although Intuitive Surgical has long been the only company with a surgical robot cleared for general surgery, the situation could be about to change.” See Dr. Ivan De Backer, “Dissecting the Robotic Surgery Market,” IDTechEx, March 30, 2020. Available at: <https://www.idtechex.com/en/research-article/dissecting-the-robotic-surgery-market/20232>. Also, a September 2018 article published in *Annals of the Royal College of Surgeons of England* noted that “[f]or 20 years Intuitive Surgical’s da Vinci system has held a monopoly in minimally invasive robotic surgery.” Andrew Brodie and Nikhil Vasdev, “The future of robotic surgery:

2017 study in the *Journal of Minimal Access Surgery* noted that Intuitive's da Vinci surgical robot was the "the only commercially available robotic equipment" at the time.¹⁹¹ Similarly, a May 2019 study on the "*Annals of Laparoscopic and Endoscopic Surgery*" noted that Intuitive "[e]ffectively [possessed] a monopoly" in the robotic surgery industry.¹⁹² An April 2018 article regarding robotic surgery published in the *World Journal of Urology* stated: "For the last 20 years, the predominant robot used in laparoscopic surgery has been [d]a Vinci by Intuitive Surgical. This monopoly situation has led to rising costs and relatively slow innovation."¹⁹³ Under a section titled "Competition A Modest Threat," an April 2019 Bloomberg Intelligence analyst report covering Intuitive stated:

Intuitive Surgical is unlikely to face significant competition in robotics until 2020, when Johnson & Johnson and Medtronic are expected to enter the market. Intuitive has a substantial lead being on its fourth-generation platform and having over 5,000 systems installed, and remains specialized while peers will be conglomerates.¹⁹⁴

A March 2019 article published in Barrons stated that "[Intuitive] is the only major manufacturer of robotic-surgery equipment, with a monopoly on the market for now."¹⁹⁵ An October 2019 Financiële Diensten Amsterdam bv analyst report noted: "Competition for Intuitive Surgical is still insignificant. While large players, among which Johnson & Johnson and Medtronic, are planning competing systems, Intuitive has a strong competitive position, supported by various elements that are both difficult and time-consuming to replicate or substitute, also for large cash-rich players."¹⁹⁶ As of late

How robotics could help shape the future of surgical care," *Annals of the Royal College of Surgeons of England*, September 4, 2018.

¹⁹¹ Ioannis D. Gkegkes, Ioannis A. Mamais, and Christos Iavazzo, "Robotics in general surgery: A systematic cost assessment," *Journal of Minimal Access Surgery*, Vol. 13, No. 4, 2017, 243-255 at p. 243.

¹⁹² Rafael E. Perez and Steven D. Schwaitzberg, "Robotic surgery: finding a value in 2019 and beyond," *Annals of Laparoscopic and Endoscopic Surgery*, Vol. 4., May 30, 2019 (hereafter "Perez et al.").

¹⁹³ Pradeep P. Rao, "Robotic surgery: new robots and finally some real competition!," *World Journal of Urology*, Vol. 36, No. 4, April 2018 (hereafter "Rao") 537-541 at p. 537.

¹⁹⁴ Jason McGorman, "Intuitive Surgical Research," Bloomberg Intelligence, April 2019.

¹⁹⁵ Daren Fonda, "Intuitive Surgical Faces New Competition and FDA Concerns," Barrons, March 18, 2019. Available at: <https://www.barrons.com/articles/intuitive-surgical-faces-new-competition-and-fda-concerns-51552903200>.

¹⁹⁶ Marcel Oomen, "Record High Growth in Surgical Procedures Triggers Upgrade of Guidance," Financiële Diensten Amsterdam, October 18, 2019, 1-4 at p. 1.

February 2022, Johnson & Johnson and Medtronic had yet to achieve FDA approval to market competing systems in the U.S.¹⁹⁷

84. In addition, I have reviewed evidence of Intuitive's own acknowledgments of its monopoly in the market for MIST Surgical Robots. For example, Bob DeSantis of Intuitive testified that, between 1999 and 2019, there were not "any viable alternatives to a surgeon that wanted to perform a minimally invasive soft tissue robotic surgery other than the da Vinci surgical robot."¹⁹⁸ In a February 2018 email to colleagues regarding strategies for how to address competition with hospital representatives, Joseph Fridlin of Intuitive stated: "Right now many [hospitals] are very happy to have competition because they hate that we are a monopoly."¹⁹⁹ In a June 2018 email to colleagues, Phil Bradshaw, Intuitive's General Manager in the UK, stated: "What I think we should do behind the scenes is develop a competition talk track around all the areas they mention, and train our people – most of which have not come across any competition in their time at [Intuitive]."²⁰⁰ In a February 2018 email to colleagues, Ralph Wadensweiler of Intuitive shared a presentation regarding "Robotic Surgical Systems in Urology," and noted the finding that "[s]urgeons don't like the [Intuitive] monopoly."²⁰¹

85. As I previously discussed, at his May 2021 deposition, Glenn Vavoso of Intuitive testified that the only surgical robots that have FDA clearance to perform minimally

¹⁹⁷ Elizabeth Cairns, "Intuitive faces down the competition," *Evaluate Vantage*, February 22, 2022 (hereafter "Cairns"). Available at: <https://www.evaluate.com/vantage/articles/interviews/intuitive-faces-down-competition>. At the time, it was expected that Johnson & Johnson would not achieve FDA approval in the U.S. until 2026, while a competing system from Medtronic was expected to achieve FDA approval in 2022. See Cairns. However, as of October 2022, Medtronic's Hugo surgical robot was still being studied in the U.S. and was not available for sale in the U.S. See Conor Hale, "Medtronic's Hugo surgical robot collects green lights in Europe, Canada, Japan," *Fierce Biotech*, October 19, 2022. Available at: <https://www.fiercebiotech.com/medtech/medtronics-hugo-surgical-robot-collects-green-lights-europe-canada-japan>.

¹⁹⁸ DeSantis Deposition at 69:19-24.

¹⁹⁹ Intuitive-00113020. Mr. Fridlin further noted these hospitals "will use this [competition] to beat us up on price. Competition will also come in low balling pricing so they can just get a foothold." See Intuitive-00113020.

²⁰⁰ Vavoso Deposition Exhibit 13 at Intuitive-00100409.

²⁰¹ Intuitive-00029346-47; Riccardo Autorino, MD, PhD, FEBU, "Robotic Surgical Systems in Urology: What's in the Pipeline?," Grand Rounds in Urology, February 7, 2018 (hereafter "GRU Presentation"). Available at: <https://grandroundsinurology.com/robotic-surgical-systems-in-urology/>. Regarding the "'Monopoly' Issue," Dr. Autorino states: "Certainly, one big issue with robotic surgery is that we have only one company. So, it's a monopoly that is in charge to control the market, and they--the robotic system installed in the world from Intuitive has been exponentially grown over the years." See GRU Presentation.

invasive soft tissue surgeries in the U.S. are TransEnterix, Inc.'s ("TransEnterix")²⁰² Senhance surgical robot and Medrobotics Corporation's ("Medrobotics") Flex surgical robot.²⁰³ However, evidence demonstrates that these two surgical robots have gained at best a *de minimis* share of the market for MIST Surgical Robots. For example, Glen Vavoso estimated that in 2019 in the U.S., Intuitive's da Vinci surgical robot had an installed base between 3,000 and 3,500; TransEnterix's Senhance had an installed base of 15 or less; and Medrobotics' Flex had an installed base of 10 or less.²⁰⁴ Mr. Vavoso further testified that in 2020 in the U.S., Intuitive's da Vinci had an installed base between 3,500 and 4,000; TransEnterix's Senhance had an installed base of 15 or less; and Medrobotics' Flex had an installed base between seven and ten.²⁰⁵ From 2019 to 2020, the da Vinci surgical robot continued to grow and competitors were unable to expand their share of the market, as the installed base of TransEnterix's Senhance and Medrobotics' Flex stayed largely the same, while the Intuitive's da Vinci installed base grew by approximately 500 surgical robots.²⁰⁶ Consistent with Mr. Vavoso's testimony, U.S. market share in the market for MIST Surgical Robots in 2020 is shown in Table 3 below. As shown, in 2020, Intuitive accounted for over 99 percent of the total installed base of MIST Surgical Robots in the U.S.

²⁰² I understand that in February 2021 TransEnterix, Inc. changed its name to Asensus Surgical, Inc. ("Asensus"). See "TransEnterix Announces Name Change to Asensus Surgical and Introduces a New Category of Surgery, Performance-Guided Surgery," Business Wire, February 23, 2021. Available at: <https://www.businesswire.com/news/home/20210223005444/en/TransEnterix-Announces-Name-Change-to-Asensus-Surgical-and-Introduces-a-New-Category-of-Surgery-Performance-Guided-Surgery>. Unless otherwise noted, throughout the remainder of this Expert Report I use the names TransEnterix and Asensus interchangeably.

²⁰³ Vavoso Deposition at 85:20-98:6. I have noted that an Intuitive September 2018 "Competitive Landscape" analysis notes that Medrobotics' Flex surgical robot has FDA clearance in the U.S. for "[v]isualization only." See Intuitive-00173706. Similarly, in a 2017 "competitive overview" analysis, Intuitive notes that the Flex surgical robot is for "[r]obotic access, not surgery." See Intuitive-00234762-4838 at 4816.

²⁰⁴ Vavoso Deposition at 117:14-118:1.

²⁰⁵ Vavoso Deposition at 118:2-119:2, Exhibit 14.

²⁰⁶ Vavoso Deposition at 120:3-121:10.

Table 3
2020 U.S. MIST Surgical Robot Market Share

Manufacturer/Robot	Installed Base	Market Share
Intuitive da Vinci	3,720	99.5%
TransEnterix Senhance	7	0.2%
Medrobotics Flex	13	0.3%
Total	3,740	100.0%

Source: 2020 Intuitive SEC Form 10-K at p. 10; TransEnterix Inc., SEC Form 10-K, filed on March 18, 2018 at p. 31; TransEnterix Inc., SEC Form 10-K, filed on February 27, 2019 at p. 33; Asensus Surgical, Inc., SEC Form 10-K, filed on March 11, 2021 at p. 4; Intuitive-00571075.

86. The evidence discussed above demonstrates that Intuitive dominated the market for MIST Surgical Robots during the Relevant Period. This constitutes one piece of evidence demonstrating that Intuitive possessed monopoly power in the tying market (the market for MIST Surgical Robots) during the Relevant Period.

ii. There Were Significant Barriers to Entry Into the Market for MIST Surgical Robots in the United States During the Relevant Period

87. As I previously discussed, another important requirement in determining whether a firm possessed monopoly power is whether there existed barriers to market entry that would allow the firm to exercise substantial market power for an appreciable period. According to the DOJ, these barriers to entry could include “ones [that were] created by the firm’s conduct itself.”²⁰⁷ The DOJ also noted that “circuit courts have found that firms with dominant market shares lacked monopoly power when their market power was insufficiently durable.”²⁰⁸ Evidence I have reviewed demonstrates that there were significant barriers to entry into the market for MIST Surgical Robots during the Relevant Period. I discuss this evidence in more detail below.

88. For example, in a December 2020 Intuitive investment analysis, Enlightened Capital noted “the robotic surgery market is characterized by high customer switching

²⁰⁷ DOJ Single-Firm Conduct at p. 21.

²⁰⁸ DOJ Single-Firm Conduct at p. 24.

costs and regulatory barriers. These switching costs are driven by the large capital cost for the robotic systems, and the substantial amount of training surgeons undergo to operate these machines. Furthermore, there are high regulatory barriers to entry, with regulatory approval required for new products to come to market.”²⁰⁹ This investment analysis further noted Intuitive’s first-mover advantage in the robotic surgery industry, adding that this “industry is characterized by substantial barriers to entry driven by high customer switching costs, and high regulatory barriers with regulatory approval required for new products to come to market.”²¹⁰ An April 2020 Informa Pharma Intelligence market research report noted that “barriers to entry are high” in the market for “robotic-assisted [surgical] systems.”²¹¹

89. With respect to MIST Robotic Surgery specifically, a September 2019 Bernstein Research analyst report covering Intuitive and potential competition stated: “We believe that Intuitive has built strong barriers to entry during the 20 years of market leadership in robotic surgery.”²¹² This September 2019 report continued:

Whatever happens, we continue to have conviction that it will take multiple years for a legitimate competitive threat to [Intuitive] to materialize. Initiating a limited commercial rollout is just the first step for [Medtronic] and [Johnson & Johnson], and many investors underestimate the time required to build out procedures, gather evidence, gain international approvals, train surgeons, etc. Intuitive has built a formidable competitive moat over the last two decades, and we expect the company to maintain its leadership position in the robotic surgery market for the foreseeable future.²¹³

A February 2020 Goldman Sachs Initiation Report noted the following: “What we cannot underscore enough is how significant we view the moat and technological advantage that [Intuitive] has built to date.”²¹⁴

²⁰⁹ Enlightened Capital, “Intuitive Surgical (SRG) Investment Analysis,” December 10, 2020 (hereafter “Enlightened Capital”). Available at: https://enlightenedcapital.substack.com/p/intuitive-surgical-isrg-investment?utm_source=profile&utm_medium=reader2.

²¹⁰ Enlightened Capital.

²¹¹ Marion Webb, “Market Intel: Medtech Giants Read to Battle Frontrunner Intuitive Surgical in ‘Soft Surgery Robotics,’” Pharma Intelligence, April 2020 at p. 3.

²¹² DeSantis Deposition Exhibit 8 at Intuitive-00278204.

²¹³ DeSantis Deposition Exhibit 8 at Intuitive-00278204.

²¹⁴ DeSantis Deposition Exhibit 9 at Intuitive-00553113.

90. In the market for MIST Surgical Robots, one significant barrier to entry is the high capital costs associated with research and development, as well as the length of time necessary to bring a MIST Surgical Robot to the market and compete effectively. For example, Glenn Vavoso of Intuitive testified that “the entire development process to achieving FDA approval, then being able to market a system -- or a system could be up to, you know, a 10-year journey.”²¹⁵ He added that bringing a surgical robot to the market “[t]akes a lot of knowhow and time and intellectual horsepower.”²¹⁶ When asked about barriers to entry in the market for MIST Surgical Robots at deposition, Bob DeSantis of Intuitive testified that it “does take a lot of time and investment to bring a soft tissue robot to market.”²¹⁷ In a December 2020 Intuitive investment analysis, Enlightened Capital noted that Intuitive “continues to invest heavily in R&D and has seen its R&D budget triple over the past 5 years.”²¹⁸

91. Another barrier to entry into the market for MIST Surgical Robots is the extensive portfolio of patents held by Intuitive, which makes it more difficult for potential competitors to design and develop surgical robots of their own and bring them to market. For example, as noted in a December 2020 Intuitive investment analysis from Enlightened Capital:

From a regulatory standpoint, [Intuitive] has been issued or owns over 2,900 patents and has more than 1,900 active patent applications. Competing products would need to meet the quality standards of [Intuitive’s] product offerings to be able to come to market. This represents a substantial hurdle for competitors, as [Intuitive] continually improves its systems.²¹⁹

²¹⁵ Vavoso Deposition at 132:4-133:4. Mr. Vavoso added: “by the time you complete all of the development work, which might require some research depending on the evolution of the system or the technology that is evolving, it could be clinical trials, which take time. It does entail human factors testing. So how does our system interface with surgeons and staff? And that is usually a requirement of the FDA process that we have to go through. That could be a large chunk of that lengthy process. And you have to submit to the FDA. They evaluate that submission. Uhm, there’s back and forth and what the iterations to that and -- you know, over the course of that from concept all the way through design, to -- to marketing could be upwards of 10 years.” See Vavoso Deposition at 133:5-24.

²¹⁶ Vavoso Deposition at 134:16-22.

²¹⁷ DeSantis Deposition at 58:9-17.

²¹⁸ Enlightened Capital.

²¹⁹ Enlightened Capital.

92. In its 2021 Form 10-K, Intuitive stated: “We place considerable importance on obtaining and maintaining patent, copyright, trademark, and trade secret protection for significant new technologies, products, and processes,” adding that as of December 31, 2021, the company “held ownership or exclusive field-of-use licenses for more than 4,200 U.S. and foreign and have filed more than 2,100 U.S. and foreign patent applications.”²²⁰ On its website, Intuitive lists 74 and 23 unique patent numbers for various da Vinci surgical robots and EndoWrist surgical instruments, respectively.²²¹

93. At deposition, Bob DeSantis of Intuitive testified that the “intellectual property protections that Intuitive has [...] might be a challenge for another company to design around.”²²² Similarly, Glenn Vavoso of Intuitive testified that a company seeking to bring a MIST Surgical Robots to the market would “ha[ve] to be mindful of the intellectual property that belongs to another company,” such as the patent portfolio Intuitive holds for its da Vinci surgical robots.²²³

94. Another barrier to entry into the market for MIST Surgical Robots is the regulatory requirements and approvals necessary to market MIST Surgical Robots in the U.S. As I discussed above, “[b]efore a medical device can be legally sold in the U.S., the person or company that wants to sell the device must seek approval from the FDA. To gain approval, they must present evidence that the device is reasonably safe and effective for a particular use.”²²⁴ At deposition, Glenn Vavoso of Intuitive testified that the FDA approval process “could be a large chunk of th[e] lengthy process” of bringing a MIST Surgical Robot to market.²²⁵ In a December 2020 Intuitive investment analysis, Enlightened Capital noted that “there is an exceptionally high bar to hurdle for competitors to receive FDA approval. Competitor systems would need to be on par if not

²²⁰ Intuitive 2021 SEC Form 10-K at p. 14.

²²¹ See the “Patent Notice” page of the Intuitive website accessed November 28, 2022 (hereafter “Intuitive Patent Notice”), available online at <https://www.intuitive.com/en-us/about-us/company/legal/patent-notice>. I have noted that, with respect to these patent numbers listed, Intuitive states: “The products and patent numbers shown below may not be all-inclusive. Other patents may protect both the products listed below and other products and services commercialized by Intuitive Surgical, Inc. Additional patents are pending.” See Intuitive Patent Notice.

²²² DeSantis Deposition at 60:4-7.

²²³ Vavoso Deposition at 150:16-23.

²²⁴ FDA’s Role in Regulating Medical Devices.

²²⁵ Vavoso Deposition at 133:5-24.

better than existing [d]a Vinci models. Without the clinical data [Intuitive] has, it will be challenging for [Medtronic]/[Johnson & Johnson] to compete on clinical outcomes.”²²⁶

Consistent with this outlook, in a July 2020 email to Intuitive colleagues regarding a planned MIST Surgical Robot from Johnson & Johnson, Ron Bair, Senior Director of Services Innovation and Product Management at Intuitive, stated:

Team – In case the news hadn’t reached you yet, J&J announced a significant delay in their competitive program, and the FDA apparently plans a much more stringent approval process for new entrants into the robotic space.²²⁷

95. Another significant barrier to entry into the market for MIST Surgical Robots is the large installed base of robots that Intuitive garnered since its da Vinci surgical robots first received FDA approval in 2000. As I discussed above, the number of da Vinci surgical robots installed in hospitals in the U.S. has grown steadily over the last two decades. At deposition, Bob DeSantis of Intuitive testified that Intuitive’s large installed base of MIST Surgical Robots in the U.S. posed a challenge to competitors trying to break into the market.²²⁸ In a February 2018 email to Intuitive colleagues regarding his qualitative research into Intuitive’s “brand positioning” in the market, Larry Cesnik, Group Manager, Market Research at Intuitive, noted:

Both [physicians and hospitals] see a multi-pronged **competitive advantage** for Intuitive: pioneer in robotic surgery with a quality/reliable product that has been continually improved over 20 years. (In addition, [Intuitive’s] deep penetration into hospitals/medical schools shields it from new competitors in the robotic market.)²²⁹

96. Intuitive’s large installed base has allowed for a large number of surgeons in the U.S. to be trained on the da Vinci surgical platform, which has created a further barrier to entry for new MIST Surgical Robots. For example, in a September 2019 analyst report

²²⁶ Enlightened Capital.

²²⁷ Deposition of Ronald Lee Bair, Jr., May 24, 2021 (hereafter “Bair Deposition”) Exhibit 4. Mr. Bair added that this development was “[y]et another reminder – what we do isn’t easy.” See Bair Deposition Exhibit 4.

²²⁸ “Q. There’s some challenges that potential competitors face when they’re trying to -- to break into that market or providing care to patients; right? A. Yes. Q. One challenge is that there is an already large install[ed] base of da Vinci robots in hospitals around the United States; is that right? A. Yes.” See DeSantis Deposition at 59:14-21.

²²⁹ Intuitive-00121229-230 at 229 (emphasis in original).

covering Intuitive, Bernstein Research explained how Intuitive's large installed base creates a barrier to entry in the market for MIST Surgical Robots:

Surgeons do not like change. If a surgical approach is creating good patient outcomes, it is very difficult to convince a surgeon to consider a new approach. Intuitive has spent 20 years working hard to drive adoption of robotic surgery. Over that time, the company has placed over 5,300 robots and trained over 44,000 surgeons on the da Vinci. And surgeons have invested significant time and energy to learn procedures and build skills on the platform, with over 6 million procedures performed to date and over 14,000 peer-reviewed papers published.²³⁰

Bernstein Research added:

As much as surgeons may welcome an alternative to Intuitive, inertia will be an important barrier to switching. Given the time and energy surgeons have invested in building skills on da Vinci, many will resist considering a new, untested platform. And as much as administrators would love to drive costs down, they will struggle to convert [Intuitive] programs to [Medtronic] programs without surgeon support. The new competition will have to be really compelling to make a difference. They will need to earn their right to compete.²³¹

In an email to Intuitive executives, Katie Anderson of Anderson Qualitative (a market research firm) discussed her conversation with a Vice President of Purchasing at a medium-sized hospital that was considering purchasing a da Vinci surgical robot, noting: "He said what makes Intuitive unique/competitive advantage vs. other companies is that is has **been around for 20 years & it is in the medical schools where the doctors are being trained.**"²³²

97. Given the large number of surgeons that are trained on the da Vinci surgical platform in the U.S. due to Intuitive's large installed base of MIST Surgical Robots,

²³⁰ DeSantis Deposition Exhibit 8 at Intuitive-00278221.

²³¹ DeSantis Deposition Exhibit 8 at Intuitive-00278221. See, also, DeSantis Deposition Exhibit 8 at Intuitive-00278204. At his May 2021 deposition, Bob DeSantis, Intuitive's Executive Vice President and Chief Product Officer, testified: "Q. Has there been compelling competition such that surgeons have switched away from the da Vinci robot to some other system? A. To date, little." See DeSantis Deposition at 56:19-22.

²³² Intuitive-00011487 (emphasis in original).

evidence demonstrates that hospitals are resistant to switching to alternative MIST Surgical Robots. For example, Edward Harrich of Pullman Hospital testified that surgeons at Pullman have “devoted substantial time and effort learning how to use the da Vinci surgical robot,” and further that switching to a competitor surgical robot would entail requiring surgeons to spend valuable time relearning how to use the competitor surgical robot.²³³ According to an October 2020 op-ed written by Eve Cunningham, MD, MBA, the Chief Medical Officer of Providence Medical Group:

Mass exodus of surgeons or recruitment challenges are a risk if robots are restricted or removed from facilities. A 2011 study from the *Journal of Minimally Invasive Gynecology* demonstrated that 58% of ob-gyn residency programs were training their residents in robotics. As a physician leader tasked with hiring a physician workforce, my observation is that new surgeon graduates are making career choices based on their ability to access the tool, a situation also reported in this 2014 article.²³⁴

Dr. Cunningham added: “Here we are in 2020, and an entire generation of gyn surgeons have adopted and trained on the da Vinci.”²³⁵ This is consistent with the evidence discussed earlier in this Expert Report demonstrating that losing a da Vinci surgical robot would have caused hospitals to lose surgeons.²³⁶

98. The evidence discussed above demonstrates that there are significant barriers to entry into the market for MIST Surgical Robots in the U.S., as hospitals are resistant to

²³³ Harrich Deposition at 57:4-58:10. Mr. Harrich added that Pullman Hospital had to choose between purchasing the da Vinci robot or a competitor robot, the amount of training the hospital’s surgeons have already spent on the Intuitive da Vinci surgical robot and their lack of training on the competitor surgical robot would be a factor in their decision-making. See Harrich Deposition at 57:14-58:23.

²³⁴ Cunningham.

²³⁵ Cunningham.

²³⁶ In the case of Pullman Hospital, back in 2011, the conversation among hospital executives at that time addressed the hospital’s potential loss of its entire prostate business if they did not acquire a da Vinci surgical robot. See Harrich Deposition at 124:16-125:9. Further, Pullman’s urologist, Dr. John Keizur, informed the hospital that if they were going to keep doing prostate surgeries, they had to get a da Vinci robot. See Harrich Deposition at 124:16-125:9. At deposition, Edward Harrich of Pullman Hospital testified: “Q. Is it fair to say that the prostate surgery was the driver in terms of motivating Pullman to acquire the da Vinci Si in 2011? A. That, and we needed the robot to help land urology-trained surgeons. The ones coming out of school that we talked to, as soon as we said we didn’t have a robot, the conversation was over and they moved on.” See Harrich Deposition at 125:10-17. Further, Pullman lost a different urologist, Dr. Ullrich, because Pullman did not own a da Vinci surgical robot, and it was only with the later acquisition of a da Vinci robot that they were able to hire his replacement. See Harrich Deposition at 11:21-12:18.

seeking out and purchasing alternatives to the da Vinci surgical robot, even if the switch brings about cost savings to the hospital. As one surgeon explained in an interview for a September 2019 analyst report covering Intuitive:

We were excited to buy a TransEnterix robot a couple of years ago after suffering under the Intuitive monopoly for many years. We were excited to see a competitor, and the system looked promising. It has some nice features like the eye-catching camera. But it does not stack up to da Vinci – not even close. It’s worse than lap, and now it’s in storage.²³⁷

Consistent with this outlook, as Stacey Donovan of Evergreen Health explained, in the current healthcare market, “the Intuitive da Vinci robot is the standard of care in robotic surgery.”²³⁸ Similarly, Edward Harrich of Pullman Hospital explained that “in this day and age, [...] to be a top-tier hospital, you should have [...] a da Vinci robot.”²³⁹ This constitutes another piece of evidence demonstrating that Intuitive possessed monopoly power in the market for MIST Surgical Robots in the U.S. during the Relevant Period.

iii. Intuitive’s Prices for da Vinci Robots Greatly Exceeded Marginal Costs

99. While the control of a large share of sales in the market taken together with the ability to exclude potential competitors means a firm *could* exercise substantial market power, another way of determining whether a firm possesses market power is by looking for the actual *exercise* of market power in the form of higher prices. One measure of market power is the ability of a firm to price in excess of marginal cost. “For the competitive firm, price equals marginal cost; for the firm with monopoly power, price exceeds marginal cost. Therefore, a natural way to measure monopoly power is to examine the extent to which the profit-maximizing price exceeds marginal cost.”²⁴⁰ In 1934, economist Abba Lerner proposed the price-cost margin as “the index of the degree of monopoly power,” commonly known as the Lerner Index.²⁴¹ Economists often use this

²³⁷ DeSantis Deposition Exhibit 8 at Intuitive-00278216.

²³⁸ Donovan Deposition at 44:5-19.

²³⁹ Harrich Deposition at 15:4-11.

²⁴⁰ Pindyck & Rubinfeld (8th edition) at p. 371

²⁴¹ “If P = price and C = marginal cost, then the index of the degree of monopoly power is $(P-C)/P$ ” see A.P. Lerner, “The Concept of Monopoly and the Measurement of Monopoly Power,” *The Review of Economic Studies*, Vol. 1, No.3, 1934, 157-175 at p. 169.

index to measure market power, where the larger the Lerner Index is, the greater is the degree of monopoly power.²⁴²

100. The market power possessed by a monopolist is defined by one standard economic textbook as follows:

In contrast to a price-taking competitive firm, a monopoly knows that it can set its own price and that the price chosen affects the quantity it sells. A monopoly can set its price above its marginal cost but does not necessarily make a supracompetitive profit. For example, if a monopoly incurs a fixed cost, its profit may be zero (the competitive level) even if its price exceeds its marginal cost. It is common practice to say that whenever a firm can profitably set its price above its marginal cost without making a loss, it has *monopoly power* or *market power*.²⁴³

101. Put another way, monopoly power refers to the ability of a firm to persistently price at a level that is significantly higher than the competitive price. I discuss below evidence I have reviewed demonstrating that Intuitive exercised monopoly power in the tying market (the market for MIST Surgical Robots) during the Relevant Period. As I explain, because Intuitive possessed monopoly power in this relevant antitrust market, it was able to price above competitive levels. Thus, this *exercise* of monopoly power constitutes another form of evidence establishing that Intuitive possessed monopoly power in the market for MIST Surgical Robots.

102. For example, as noted above, one indication of Intuitive's exercise of monopoly power in the market for MIST Surgical Robots is the fact that da Vinci robot prices were set well above marginal costs. For example, in one internal analysis covering 2017 through 2020, Intuitive reported that its global Systems business unit earned contribution margins of 65.1 percent and 60.0 percent in 2019 and 2020, respectively.²⁴⁴ If Intuitive had not dominated the market for MIST Surgical Robots, it would not have been able to raise prices so far above marginal cost to supra-competitive levels and earn the supra-

²⁴² Pindyck & Rubinfeld (8th edition) at p. 371. By construction, the Lerner Index is always between zero and one; for a perfectly competitive firm, price equals marginal cost; so, the Lerner's index equals zero.

²⁴³ Carlton & Perloff at p. 117.

²⁴⁴ Intuitive-00595405.

normal profits it earned on its da Vinci surgical robot. Economic theory teaches that in the absence of market power, a firm's prices are driven toward the cost of production.²⁴⁵ Intuitive's extremely high profit margins on da Vinci surgical robot sales constitutes another piece of evidence indicating that Intuitive possessed market power in the market for MIST Surgical Robots.

103. Additional evidence that prices for da Vinci robots are set well above marginal costs include acknowledgments from Intuitive itself. For example, in a June 2017 summary of an Intuitive meeting that covered brainstorming scenarios for the U.S. MIST Surgical Robot market (particularly with respect to the competitive landscape) that was circulated to Intuitive executives by Catherine Mohr of Intuitive, Intuitive analyzed three market scenarios: a "Best case" scenario, a "Mid level Scenario," and a "Nightmare Scenario."²⁴⁶ Notably, under these scenarios, as Intuitive loses market power with the advent of new, viable surgical robots, it assumes that it would need to lower its prices in response to that competition.

104. For example, under the "Best case" scenario, Intuitive assumes that it faces "low end competition" from potential new entrants into the market for MIST Surgical Robots, which would result in "[s]ome pricing impact" on Intuitive.²⁴⁷ Under the "Mid level Scenario," Intuitive assumes that Medtronic and J&J would launch MIST Surgical Robots²⁴⁸ via existing relationships, which would lead Intuitive to "have to discount to be competitive head to head" with these new surgical robots.²⁴⁹ Furthermore, under the "Nightmare Scenario," Intuitive assumes that there would be a "[r]elease of multiple robots [that] paralyzes the market," which would cause a "[r]ace to the bottom" in terms

²⁴⁵ Carlton & Perloff at pp. 666-667.

²⁴⁶ Vavoso Deposition Exhibit 16, Exhibit 17.

²⁴⁷ Vavoso Deposition Exhibit 17 at Intuitive-00362753.

²⁴⁸ Vavoso Deposition Exhibit 17 at Intuitive-00362752. Intuitive assumes under this scenario that the surgical robot launched by J&J is "good not great," and that the surgical robot launched by Medtronic is "'good enough' to make hospitals feel OK about bundling Medtronic's robot." See Vavoso Deposition Exhibit 17 at Intuitive-00362752.

²⁴⁹ Vavoso Deposition Exhibit 17 at Intuitive-00362752. Under this scenario, Intuitive assumes (among other things) that these "[n]ew robots successfully interfere/delay [Intuitive's] robot sales, but don't stall completely," and that "Anti [Intuitive] pricing sentiment leads to head to head pricing discounting." See Vavoso Deposition Exhibit 17 at Intuitive-00362752.

of robot pricing.²⁵⁰ I have noted too that, under this scenario in which Intuitive loses most, if not all, of its monopoly power, Intuitive assumes that it “bet wrong on a limited instrument set for the low end and lose it entirely to competitors with full suites of low end instruments.”²⁵¹ In a set of notes, highlights, and actions following an October 2019 “Quarterly Ops/Strategy Meeting,” Intuitive noted that “Intuitive’s first phase of business was largely without direct competition,” but that the “[n]ext 5-6 years will be bloody. One advantage of competition is that the market will grow faster. Margins will be low until competitors tire of their own low margins.”²⁵² Intuitive later noted that “[i]n a new competitive environment, market share does trump margin.”²⁵³

105. Intuitive’s assumptions regarding pricing of its da Vinci robots in response to more and more viable competition is consistent with evidence I have reviewed in the form of acknowledgments from industry observers. For example, a May 2020 study on “Laparoscopic Robotic Surgery” noted: “With competition now in the market for laparoscopic robotic assisted surgery, costs for RAS systems and consumables should start to come down. This in turn should reduce the cost of laparoscopic RAS.”²⁵⁴ An April 2018 article regarding robotic surgery published in the *World Journal of Urology* noted that Intuitive’s “monopoly situation has led to rising costs and relatively slow innovation.”²⁵⁵

106. The evidence discussed above demonstrates that Intuitive exercised monopoly power in the market for MIST Surgical Robots during the Relevant Period in that it was

²⁵⁰ Vavoso Deposition Exhibit 17 at Intuitive-00362752. Under this scenario, Intuitive assumes (among other things) that the “market perceives no differen[ces] in robotic outcomes, negating our technological superiority,” “J&J and/or Medtronic manage to leverage their long term relationships to shut us out,” and that “[a]nti [Intuitive] pricing sentiment leads to spiteful large buys of competitor products.” See Vavoso Deposition Exhibit 17 at Intuitive-00362752.

²⁵¹ Vavoso Deposition Exhibit 17 at Intuitive-00362752.

²⁵² Intuitive-00366044-053 at 045, 050.

²⁵³ Intuitive-00366044-053 at 051.

²⁵⁴ Longmore et al. at p. 16. This study also noted: “Robotic-assisted surgery has seen a slow uptake due to cost and the holding of patents by Intuitive Surgical limiting the number of RAS systems in the market. With the expiration of the patents, we are now seeing a rise in the number of new RAS systems available or soon to be available. Several systems have achieved CE certification and are now available in the European Union, while only the TransEnterix Senhence [sic] has achieved FDA approval, several others are currently undergoing the process for FDA approval. These new robots will lead to competition and reduce the costs of RAS and will lead to an increase in use. Robotic-assisted surgery will become more common than manual laparoscopic surgery in the near future.” See Longmore et al. at p. 17.

²⁵⁵ Rao at p. 537.

able to price above competitive levels. This exercise of monopoly power constitutes another form of evidence establishing that Intuitive possessed monopoly power in the market for MIST Surgical Robots.

107. The evidence discussed above demonstrates that Intuitive possessed monopoly power in the tying market (the market for MIST Surgical Robots) in the United States during the Relevant Period. In the next section below, I discuss evidence demonstrating that Intuitive used the leverage its monopoly power in the Market for MIST Surgical Robots in the U.S. afforded them to maintain its monopoly in the tied market (the EndoWrist Repair and Replacement Market) in the United States during the Relevant Period.

B. Intuitive Used Its Monopoly Power in the Market for MIST Surgical Robots to Maintain its Monopoly the Market for EndoWrist Surgical Instruments in the United States During the Relevant Period

108. As I previously discussed, I understand from Counsel for the Plaintiff that Plaintiff's allegations in this matter relate to Intuitive's dominance of the market for MIST Surgical Robots with its da Vinci surgical robots, and that, through exclusionary and anticompetitive conduct, Intuitive uses this dominance to maintain its monopoly in a separate market: the EndoWrist Repair and Replacement Market. I also discussed above Plaintiff's allegations that "Intuitive has gone to extraordinary efforts to leverage its monopoly power in robots for use in minimally invasive soft tissue surgery, the repair and support of those robotic systems, and its monopoly power in instruments for use with such robots to foreclose aftermarket repair of those instruments by any competitors," and that an "effect of Intuitive's anticompetitive conduct is to generate and sustain unreasonably high, supra-competitive prices for aftermarket EndoWrist instruments."²⁵⁶

109. Having established above that Intuitive possessed market power in the tying market (the market for MIST Surgical Robots), I now demonstrate that Intuitive used that market power to foreclose competition in the tied market (the EndoWrist Repair and

²⁵⁶ Complaint at ¶87, 110. "Intuitive leverages its market power in the worldwide and domestic markets for the sale of surgical robots used in minimally invasive soft tissue surgery, and the market for repair services for their robots, to pressure customers to use supra-competitively priced replacement EndoWrist parts." See Complaint at ¶65.

Replacement Market). As articulated by Dirk Barten of Intuitive upon learning that the company would not be pursuing Project Dragon (offering refurbished EndoWrist instruments at a lower cost than replacement EndoWrist instruments in response to a competitive threat from third-party repairers): “we use our monopol[y] role to keep competition out.”²⁵⁷ I discuss this evidence in greater detail below.

i. Intuitive’s Restrictive Sales, License, and Service Agreement Allowed Intuitive to Maintain Monopoly Power in the EndoWrist Repair and Replacement Market

110. As I previously discussed, I understand Defendant’s alleged anticompetitive conduct “to pressure customers to use supra-competitively priced replacement EndoWrist parts”²⁵⁸ includes Intuitive’s standard Sales, License, and Service Agreement (hereafter “Intuitive Service Agreement”) for its da Vinci surgical robots, which both expressly “demands that customers further agree to a limited license for the use of EndoWrist instruments,” which “expires once an EndoWrist instrument is used up to its maximum number of uses as specified in the documentation accompanying the particular instrument,”²⁵⁹ and “prohibits customers from engaging any unauthorized third party to repair, refurbish, or recondition EndoWrist instruments, whether before or after the limited use license has expired.”²⁶⁰

111. Hospitals were required to sign this standard Intuitive Service Agreement in order to purchase a da Vinci surgical robot.²⁶¹ One of the terms included in the Intuitive Service Agreement that each hospital was required to sign prohibited hospitals from permitting “any third party to modify, disassemble, reverse engineer, alter, or misuse the

²⁵⁷ Intuitive-00604054-55 at 54.

²⁵⁸ Complaint at ¶65.

²⁵⁹ Complaint at ¶4. I understand Plaintiff alleges that “EndoWrists also include an internal memory chip” which “counts the number of times the EndoWrist is attached to a da Vinci robot arm, not an actual measure of usage such as usage time, number of movements, or actuation time.” See Complaint at ¶¶30-31. Further, I understand that Plaintiff alleges that the “da Vinci robot system queries the memory chip prior to performing any operations with the particular EndoWrist instrument. After a certain number of uses, usually limited to ten, the EndoWrist instrument is rendered non-operational, based solely on the number of times it is attached to the da Vinci robot arm, without any regard to the actual underlying physical condition of the EndoWrist instrument. Without the services of providers such as SIS, the hospital has no choice but to buy a brand-new replacement EndoWrist instrument from Intuitive at full price.” See Complaint at ¶32.

²⁶⁰ Complaint at ¶4.

²⁶¹ Vavoso Deposition at 194:7-10.

system or instruments and accessories.”²⁶² At deposition in a related matter, Glenn Vavoso of Intuitive testified that this term of the Intuitive Service Agreement “prohibits hospitals from using [Rebotix] [R]epair to service EndoWrists for the Intuitive da Vinci surgical robots.”²⁶³ Another of the terms included in the Intuitive Service Agreement that each hospital was required to sign stated that the license to use an EndoWrist instrument with the da Vinci surgical robot purchased by the hospital “expires once an Instrument or Accessory is used up to its maximum number of uses as is specified in the Documentation accompanying the Instrument or Accessory.”²⁶⁴ At deposition, Mr. Vavoso testified that he understood this term of the Intuitive Service Agreement to mean that the EndoWrist “instruments have a designated number of lives. And once those lives are used, then the license has expired.”²⁶⁵ And further, to comply with the Intuitive Service Agreement, Mr. Vavoso testified that hospitals must “throw away EndoWrist[s] whose use counters have expired” and “buy new EndoWrists from Intuitive.”²⁶⁶

112. As I previously discussed, the first step in determining whether exclusionary conduct on the part of a given firm is considered to be anticompetitive is whether that firm maintains significant monopoly power, and that, although the existence of monopoly power is not, by itself, anticompetitive, a firm that engages in exclusionary conduct in an attempt to maintain monopoly power inhibits the competitive process and harms competition.²⁶⁷ Intuitive’s exclusionary conduct in the form of its requirement that all

²⁶² Vavoso Deposition at 194:11-195:11, Exhibit 24 at Intuitive-00067540. Glenn Vavoso of Intuitive testified that this term is included in each of the sales contracts that Intuitive requires hospitals to sign and that he was not “aware of any contract with any hospital that does not include this use of system term.” See Vavoso Deposition at 195:4-11.

²⁶³ Vavoso Deposition at 195:12-16. Mr. Vavoso further testified that the Intuitive Service Agreement prohibits hospitals from “repairing, refurbishing, or reconditioning their EndoWrists regardless of how many uses are remaining” on the EndoWrist surgical instrument. See Vavoso Deposition at 197:19-23.

²⁶⁴ Vavoso Deposition at 195:17-196:14, Exhibit 24 at Intuitive-00067542. At deposition, Glenn Vavoso of Intuitive was unable to “identify any sales contract with the hospital that does not include the language in paragraph 8.” See Vavoso Deposition at 198:23-199:2.

²⁶⁵ Vavoso Deposition at 196:24-197:6.

²⁶⁶ Vavoso Deposition at 203:5-9. According to Mr. Vavoso, under the terms of the Intuitive Service Agreement, hospitals are “required to dispose of [expired EndoWrists] appropriately” and “certainly not use [expired EndoWrists] again.” Vavoso Deposition at 203:20-204:4.

²⁶⁷ Hovenkamp, *The Antitrust Enterprise* at p. 206. As I discussed above, according to the DOJ: “Monopoly power is conventionally demonstrated by showing that both (1) the firm has (or in the case of attempted monopolization, has a dangerous probability of attaining) a high share of a relevant market and (2) there are entry barriers – perhaps ones created by the firm’s conduct itself – that permit the firm to exercise substantial market power for an appreciable period.” See DOJ Single-Firm Conduct at p. 21.

hospitals enter into the Intuitive Service Agreement as a condition of their purchase of a da Vinci surgical robot, as well as Intuitive's continued enforcement of the Intuitive Service Agreement, allowed it to maintain monopoly power in the tied market (the EndoWrist Repair and Replacement Market) during the Relevant Period. I discuss the evidence that forms the bases of this conclusion in greater detail below.

a. Intuitive Dominated the EndoWrist Repair and Replacement Market in the United States During the Relevant Period

113. I discussed above how, according to the DOJ, "courts typically have required a dominant market share before inferring the existence of monopoly power."²⁶⁸ As I discussed above, Intuitive deliberately designed its da Vinci robots to only work with surgical instruments manufactured by Intuitive (EndoWrists). As a result, "the only entity that sells EndoWrists to hospitals is Intuitive."²⁶⁹ However, while there were no other entities that competed with Intuitive for the sale of replacement EndoWrist surgical instruments, Intuitive did begin to face a competitive threat recently from third-party repairers of the EndoWrist surgical instruments originally manufactured by Intuitive, as discussed above. However, as a result of Intuitive's Alleged Misconduct, it was able to maintain its dominance of the EndoWrist Repair and Replacement Market during the Relevant Period.

114. For example, in an August 2019 internal analysis of third-party repairs of EndoWrist surgical instruments, Intuitive found that, since 2016, only 18 accounts had been "affected" in that they had EndoWrist surgical instruments repaired by third-party repairers, a fraction of the installed base of 3,531 da Vinci robots Intuitive had in the U.S. in 2019.²⁷⁰ Intuitive further noted that among the "[a]ccounts affected" worldwide (29 in total), 17 of them were "[n]o longer using reprogrammed instruments" following Intuitive's efforts to enforce the restrictive Intuitive Service Agreement.²⁷¹ Similarly, in a February 2020 analyst report in covering the "third party risk" to Intuitive's Instruments & Accessories business segment, Deutsche Bank, having determined that "FDA action to

²⁶⁸ DOJ Single-Firm Conduct at p. 21.

²⁶⁹ Vavoso Deposition at 59:4-14, 242:2-23.

²⁷⁰ Intuitive-00194074-089 at 077; Intuitive Surgical, Inc., SEC Form 10-K, filed February 7, 2020 at p. 10.

²⁷¹ Intuitive-00194074-089 at 077, 088.

stymie usage of repaired instruments is highly unlikely,” and that “[h]ospitals [are] starting to push[]back on legality/enforceability of terms of service,” forecasted that a “4-6% penetration of Intuitive’s *de novo* instruments on a unit basis in 2021 is reasonable and, based on our additional due diligence, potentially conservative.”²⁷² Based on this forecast, Intuitive would account for the remaining 94 to 96 percent of the EndoWrist Repair and Replacement Market in the U.S.

115. The evidence discussed above demonstrates that Intuitive dominated the EndoWrist Repair and Replacement Market in the U.S. during the Relevant Period. This constitutes another piece of evidence demonstrating Intuitive’s possession of monopoly power in the tied market (the EndoWrist Repair and Replacement Market) during the Relevant Period. In the next section, I discuss evidence demonstrating that the restrictive Intuitive Service Agreement that hospitals were required to sign with every purchase of a da Vinci surgical robot created significant barriers to entry in that they limited rivals’ (including SIS) ability to compete effectively with Intuitive in the EndoWrist Repair and Replacement Market, allowing Intuitive to maintain its dominance of the EndoWrist Repair and Replacement Market during the Relevant Period.

b. Intuitive’s Conduct Prevented Rivals, Including SIS, from Competing Effectively in the EndoWrist Repair and Replacement Market in the United States During the Relevant Period

116. As I previously discussed, one important requirement in determining whether a firm possessed monopoly power is whether barriers to market entry existed that would allow the firm to exercise substantial market power for an appreciable period. Evidence I have reviewed demonstrates that the restrictive Intuitive Service Agreement that hospitals were required to sign with every purchase of a da Vinci surgical robot created significant barriers to entry in that they limited rivals’ (include SIS) ability to compete effectively with Intuitive in the tied market (the EndoWrist Repair and Replacement Market).

117. In a February 2020 analyst report in covering the “third party risk” to Intuitive’s Instruments & Accessories business segment (which includes the sale of EndoWrist

²⁷² DeSantis Deposition Exhibit 11 at Intuitive-00566055-057, 067 (emphasis in original). Deutsche Bank made a similar assessment in a January 2020 analyst report. See Intuitive-00552993-53014 at 52994.

instruments), Deutsche Bank noted: “In no uncertain terms, the standard terms of service outlined in customer contracts state that hospitals are precluded from engaging with third parties as well as the potential consequences of violation – nullification of contracts, product warranties, etc.”²⁷³ Evidence demonstrates that Intuitive took a number of steps in order to prevent hospitals that had opted to have its EndoWrist surgical instruments repaired by a third-party repair company such as SIS from doing so.

118. In particular, following an initial conversation with the hospital in question, Intuitive would send a form letter to the hospital that detailed Intuitive’s concerns with the hospital’s use of third-party repair companies and highlighted that Intuitive considered the hospital’s use of the repair services a breach of Intuitive’s contract with the hospital.²⁷⁴ Those letters also informed the hospitals that if they continued using repair services, Intuitive would cease servicing their da Vinci robots.²⁷⁵ Further, if a hospital continued using third-party repair services after receiving Intuitive’s letter, Intuitive would in fact stop servicing the hospital’s da Vinci robot.²⁷⁶ Intuitive would also void the warranty on da Vinci robots sold to hospitals and refuse to provide any further service under the terms of that warranty.²⁷⁷ Evidence I have reviewed establishes that Intuitive’s overall process in response to learning of a hospital repairing its EndoWrist surgical instruments through a third-party repairer generally took a short period of time: ten business days for the conversation phase, ten business days for the customer letter, and five business days for account termination.²⁷⁸ At some point, hospitals would encounter a service message on the da Vinci robot, and without Intuitive providing service, that da Vinci robot would be unusable for surgery.²⁷⁹

119. As Ron Bair, Senior Director of Services, Innovation, and Product Management at Intuitive, testified, Intuitive enforces the terms of the Intuitive Service Agreement to stop its customers from using reprogrammed EndoWrist surgical instruments.²⁸⁰ Mr. Bair

²⁷³ DeSantis Deposition Exhibit 11 at Intuitive-00566067.

²⁷⁴ Vavoso Deposition at 221:3-222:15; DeSantis Deposition at 267:19-269:3.

²⁷⁵ Vavoso Deposition at 221:3-222:15; DeSantis Deposition at 267:19-269:3.

²⁷⁶ Vavoso Deposition at 223:14-20; DeSantis Deposition at 262:6-263:3.

²⁷⁷ Vavoso Deposition at 223:21-224:19.

²⁷⁸ Deposition of Antonio (AJ) Inacay, June 8, 2021 at 163:1-164:3, Exhibit 7 at Intuitive-00439336.

²⁷⁹ Vavoso Deposition at 227:13-228:18.

²⁸⁰ Bair Deposition at 137:11-137:16.

further testified that a hospital's decision to keep using reprogrammed EndoWrist surgical instruments comes with "consequence" imposed by Intuitive: Intuitive will "aggressively pursue the terms" of the Intuitive Service Agreement and, ultimately, will stop servicing hospitals' da Vinci robots if they continue to use third-party repairers such as SIS to repair their EndoWrist surgical instruments.²⁸¹ Mr. Bair also testified at deposition that "if Intuitive doesn't service [a da Vinci] robot and the robot fails, it means the hospital can no longer do surgeries with that robot."²⁸² Edward Harrich of Pullman Hospital agreed, testifying:

Q. If Intuitive would not perform preventive maintenance on your robot, does your robot have any use at all? [...]

THE WITNESS: It would have no use at all. [...]

Q. If Intuitive refused to provide maintenance on your da Vinci robot, could the da Vinci robot be used for any surgeries?

A. No. If we couldn't have the preventative maintenance, we'd stop using it.²⁸³

Similarly, in a related matter, Tyler McDonald of Conway Regional Medical Center testified that Intuitive's unwillingness to continue servicing its da Vinci surgical robot was a factor in its decision to no longer have their EndoWrist surgical instruments repaired by third-party repairers, adding that "[w]ithout ongoing service, the robot could potentially become unusable."²⁸⁴ As I discuss in greater detail below, for hospitals, the threat of having their da Vinci surgical robots that they invested a significant amount of money and other resources (such as surgeon training) into become inoperable was a threat that hospitals took seriously.²⁸⁵ As a result, after receiving these cease-and-desist letters from Intuitive, many hospitals stopped using third-party services to repair their EndoWrist surgical instruments.²⁸⁶

²⁸¹ Bair Deposition at 134:18-137:10.

²⁸² Bair Deposition at 136:2-5.

²⁸³ Harrich Deposition at 77:13-24.

²⁸⁴ Deposition of Tyler McDonald, May 7, 2021 (hereafter "McDonald Deposition") at 19:10-20.

²⁸⁵ In 2021, a da Vinci surgical robot cost between \$0.5 million and \$2.5 million. See Intuitive 2021 SEC Form 10-K at p. 58.

²⁸⁶ Vavoso Deposition at 225:24-226:22.

120. Evidence demonstrates that Intuitive’s enforcement of its sales agreement was successful at preventing rival third-party repairers (such as SIS) from competing effectively in the EndoWrist Repair and Replacement Market. For example, at deposition, Greg Posdal, CEO of SIS, testified:

Q. So what happened with this huge business opportunity for S.I.S.? [...]

THE WITNESS: It started very well, and it was very well received at all the places that we had contacted. Most had actually given us instruments, and we had actually gone through the process and reprogrammed and sent these instruments back to these facilities, a handful, probably 30 or 40. I think there's a form in evidence here that kind of explains who we did that service to. But either it was quickly put down, or before we even got started the customers said they were concerned about moving forward because of what they were told by Intuitive about using third parties for repairing or having any other effect on their instruments. [...]

Q. Do you recall what any of the customers said was specifically a concern coming from Intuitive?

A. Yes. I'll -- their main concerns were that Intuitive had sent letters -- it was a combination, that their representatives were saying to them specifically that they should be not -- should not be using a third party to repair the instruments, that there is specific language in their agreements that prohibit them sending any of these instruments out to third parties for repair, and that there was the threat that they would stop selling them new equipment or servicing the existing robotics for these pieces of equipment.²⁸⁷

121. Similarly, at deposition in a related matter, Glenn Papit, one of four founding members of third-party repairer Rebotix, explained that Rebotix “is basically not functional at this moment” because the “customers that we gained received notices from Intuitive that if they used us, they would cancel the service contracts on their robots,

²⁸⁷ Posdal Deposition at 19:5-20:15.

which frightened the customers to death.”²⁸⁸ Mr. Papit described “two contracts in place that would have led to hundreds of hospitals coming onboard” and getting their EndoWrists repaired by Rebotix, only to lose those contracts as a result of Intuitive’s conduct.²⁸⁹ Mr. Papit further explained: “It was becoming what we would call circular business. As soon as we put an account on and the OEM [Intuitive] discovered it, they would have a management person in there threatening that withdrawal of their service contract, and so soon as you put a customer on, you’d lose them in 60 days.”²⁹⁰ Similarly, Bob Overmars of BPI Medical,²⁹¹ estimated that BPI Medical contacted all of its business relationships that owned da Vinci surgical robots (approximately 30 or 40 hospitals) about Rebotix’s repair services, but only two decided to use Rebotix’s services.²⁹² When asked why only two opted to use Rebotix’s repair services for their EndoWrist surgical instruments, Mr. Overmars testified:

The Intuitive rep would tell the customer that they would no longer support their robotics program or maintenance of their EndoWrists of the robotic devices if they used a third party for the repair. That scared the customer away and did not give us the opportunity to get those repairs from those other hospitals.²⁹³

²⁸⁸ 30(b)(6) Deposition of Glenn Papit, June 2, 2021 (hereafter “Papit Deposition”) at 33:3-16.

²⁸⁹ Papit Deposition at 238:2-25. Mr. Papit testified: “Q. What contracts are those? A. Premier GPO and BayCare Health System. Q. What is it that Intuitive did with respect to the Premier GPO contract? A. They tied the purchase of EndoWrists to the service contract for the robot, two separate products, and threatened to remove the service contract if they used our service to repair the EndoWrists. Q. And they did that with Premier? A. They did that with any hospital that was using us. Q. Well, but Premier isn’t a hospital, right? A. Correct. Q. So what is it that Intuitive did with respect to the Premier agreement that Rebotix had? [...] THE WITNESS: The Premier agreement gave us access to the hospitals, and they went to the hospitals that we accessed and did what we have discussed at length to stop them from using us. [...] Q. Okay. And what is it that you claim Intuitive did with respect to Rebotix’s contract with BayCare Health System? A. The same thing. They did primarily the same thing at all of the hospitals. They threatened the service contracts, and they said that we required a 510(k) because we were reprocessing.” See Papit Deposition at 238:17-239:20.

²⁹⁰ Papit Deposition at 240:11-21.

²⁹¹ BPI Medical is a “full service medical equipment company.” See BPI Medical, “About Us.” Available at: <https://www.bpimedical.com/about-us/>. Around mid-2018, BPI Medical had a business relationship with Rebotix in which BPI Medical would send EndoWrist surgical instruments to Rebotix for repair, as BPI Medical itself did not repair EndoWrist surgical instruments. See Overmars Deposition at 11:18-13:9.

²⁹² Overmars Deposition at 116:21-117:5.

²⁹³ Overmars Deposition at 116:21-117:16. Mr. Overmars further testified: “Q. At some point your relationship with Rebotix Repair came to an end; is that right? A. Correct. Q. And why is that? A. No hospitals would give us an EndoWrist for repair anymore. Q. Did they tell you why that was? A. Yes. Because the Intuitive rep threatened to remove the services.” See Overmars Deposition at 117:18-118:1. See, also, Overmars Deposition at 120:2-123:12.

122. Similarly, evidence in the form of hospitals' acknowledgments that they stopped having their EndoWrist surgical instruments repaired by third parties following communications from Intuitive provides additional evidence demonstrating that the restrictive Intuitive Service Agreement that hospitals were required to sign with every purchase of a da Vinci surgical robot created significant barriers to entry in that they limited rivals' (including SIS) ability to compete effectively with Intuitive in the EndoWrist Repair and Replacement Market. For example, in a related matter regarding third-party repairer similar to SIS (Rebotix), Stacey Donovan of Evergreen Hospital testified:

Q. Why did Evergreen decide to stop using Rebotix Repair's Services?

A. We made the decision to stop using the repair services based on communication from Intuitive -- based on the communication from Intuitive. [...]

Q. Did Evergreen stop using Rebotix's services because it could not afford to have its da Vinci robots no longer serviced by Intuitive? [...]

THE WITNESS: Yes, that's the reason the decision was made to stop.²⁹⁴

Similarly, Edward Harrich, Director of Surgical Services at Pullman Regional Hospital, testified:

Q. [...] Upon receiving the letter from Intuitive about the violation of your contract and the statement that it would no longer provide maintenance services, did your hospital immediately decide to terminate its relationship with Rebotix Repair?

A. Yes.²⁹⁵

²⁹⁴ Donovan Deposition at 54:5-10, 58:7-13. Ms. Donovan also testified: "Q. Do the maximum use restrictions that Evergreen imposes on EndoWrists and your inability to use repair services to extend the lives of your EndoWrists force Evergreen to purchase more EndoWrists than it would otherwise purchase from Intuitive? [...] THE WITNESS: I would say yes." See Donovan Deposition at 26:11-19.

²⁹⁵ Harrich Deposition at 82:2-8. Mr. Harrich also testified: "Q. If it weren't for Intuitive's contractual limitations, would your hospital use Rebotix's services to the full extent that Rebotix was willing to provide them? A. Yes." See Harrich Deposition at 62:6-10. Mr. Harrich further testified: "Q. "Why did your hospital stop using Rebotix Repair services? A. Well, we were informed that our preventative maintenance contract, that we were in violation of it. And so we read through the contract, saw that it did say that if we used an outside vendor for instrumentation, that the preventative maintenance contract could and, after talking with Intuitive, would be potentially canceled, so we quit using them." See Harrich Deposition at 69:8-16. Regarding the loss of Intuitive's maintenance services, Mr. Harrich testified: "Q. When you said you did not want to get in the bad graces of Intuitive, why not? A. Because the Intuitive robot, if they stop

Also, in a related matter, Tyler McDonald of Conway Regional Medical Center testified that it is no longer repairing its EndoWrist surgical instruments through third parties because it was informed that continuing to do so would mean it could no longer make purchases of replacement EndoWrist surgical instruments from Intuitive when needed, adding that Conway Regional Medical Center “understood that failure to acquire new instruments and accessories would negatively impact [its] ability to continue operating [its] robot.”²⁹⁶

123. Further evidence the restrictive Intuitive Service Agreement (and Intuitive’s enforcement of said agreement) successfully created significant barriers to entry that prevented EndoWrist surgical instrument repair companies such as SIS from entering and/or competing effectively in the EndoWrist Repair and Replacement Market includes acknowledgments from Intuitive itself. For example, regarding the cease-and-desist letters Intuitive sent to hospitals upon learning that the hospital had been using third-party repairer Rebotix to repair EndoWrist surgical instruments rather than having them replaced by Intuitive, Glenn Vavoso of Intuitive testified:

Q. Is there any instance that you can identify, as Intuitive’s 30(b)(6) witness, where a hospital continued using Rebotix’s services after receiving these letters from Intuitive?

A. Not -- not at this time.²⁹⁷

In response to a June 2019 email alerting Intuitive executives that Evergreen Hospital in Seattle, WA, had a “3rd party company ‘re-chipping’ the arms and resetting I&A lives to save cost,” Patrick Swindon of Intuitive noted that Intuitive had “an updated process for handling these sorts of situations that was developed in agreement with regulatory, post market and legal which we’ve been using for a few months now to great success.”²⁹⁸

124. The evidence discussed above demonstrates that the restrictive Intuitive Service Agreement that hospitals were required to sign with every purchase of a da Vinci surgical

maintaining it, I would have no one to go to that could come in and maintain our robot. If my robot is down, I’ve got seven unhappy surgeons. I put the hospital in a bad situation.” See Harrich Deposition at 76:22-77:3.

²⁹⁶ McDonald Deposition at 18:1-25, 34:25-35:9.

²⁹⁷ Vavoso Deposition at 225:24-226:22.

²⁹⁸ Intuitive-00106127-28 at 27.

robot created significant barriers to entry in that they limited rivals' (including SIS) ability to compete effectively with Intuitive in the EndoWrist Repair and Replacement Market. This constitutes one piece of evidence demonstrating how Intuitive used the leverage its monopoly in the tying market (the market for MIST Surgical Robots) afforded to maintain its monopoly power in the tied market (the EndoWrist Repair and Replacement Market) during the Relevant Period.

c. Intuitive's Exercise of Monopoly Power in the EndoWrist Repair and Replacement Market During the Relevant Period

125. As I noted above, one piece of evidence that a firm possesses market power in a relevant antitrust market is the *exercise* of that power, especially in setting prices. One indication of Intuitive's exercise of monopoly power in the tied market (the EndoWrist Repair and Replacement Market) is the fact that prices for EndoWrist surgical instruments which Intuitive supplied (exclusively during the Relevant Period) were set well above marginal costs. Because Intuitive possessed monopoly power in the EndoWrist, it was able to price above competitive levels. For example, Bob DeSantis of Intuitive testified that the contribution margin²⁹⁹ earned by Intuitive on sales of new replacement EndoWrist surgical instruments was approximately 89 percent.³⁰⁰ This is consistent with a financial analysis performed in connection to a pilot program concerning refurbished EndoWrist surgical instruments, which found that the contribution margin for refurbished EndoWrist surgical instruments was 84 percent, a "5 point decrease [(89 percent)] compared to new builds."³⁰¹ If Intuitive had not dominated the EndoWrist Repair and Replacement Market, it would not have been able to raise prices so far above marginal cost to supra-competitive levels, and earn the supra-normal profits it earned on EndoWrist surgical instruments. Economic theory teaches that in the absence of market power, a firm's prices are driven toward the cost of production.³⁰²

²⁹⁹ A firm's contribution margin reflects the amount of revenue earned by a firm above its variable costs. Contribution margins are often used by managers to analyze the profitability of different products manufactured and sold by a given firm. See, for example, Jonathan E. Duchac, James M. Reeve, and Carl S. Warren, *Financial and Managerial Accounting*, Twelfth Edition, Mason, OH: South-Western Cengage Learning, 2014 at pp. 890-892.

³⁰⁰ DeSantis Deposition at 249:18-22.

³⁰¹ Bair Deposition at 52:19-53:11, Exhibit 5 at Intuitive-00042956. See, also, Intuitive-00686068.

³⁰² Carlton & Perloff at pp. 666-667.

Intuitive's extremely high profit margins on EndoWrist surgical instrument sales constitutes another piece of evidence indicating that Intuitive possessed market power in the EndoWrist Repair and Replacement Market.

126. The evidence discussed above demonstrates that Intuitive used its monopoly power in the tying market (the market for MIST Surgical Robots) to maintain its monopoly in the tied market (the EndoWrist Repair and Replacement Market) in order to charge supra-competitive prices on the EndoWrist surgical instruments it sold to hospitals. As I discuss in the section below, evidence demonstrates Intuitive's alleged misconduct in this regard caused harm to competition in the EndoWrist Repair and Replacement Market.

C. Evidence Demonstrates that Intuitive's Alleged Misconduct Caused Harm to Competition in the EndoWrist Repair and Replacement Market

127. Earlier in this Expert Report I discussed evidence demonstrating that, during the Relevant Period, (i) Intuitive maintained significant monopoly power in the EndoWrist Repair and Replacement Market; and (ii) Intuitive's exclusionary conduct prevented rivals, including SIS, from competing effectively in the EndoWrist Repair and Replacement Market. As I previously discussed, the third factor in determining whether exclusionary conduct on the part of a firm is considered anticompetitive in that it caused harm to competition is whether the exclusionary conduct results in lower market output to customers, or higher prices paid by customers. Evidence I have reviewed demonstrates that, as a result of Intuitive's Alleged Misconduct, hospitals had little choice but to pay higher prices for replacement EndoWrist instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS. I discuss the evidence that forms the basis of this conclusion in greater detail below.

i. Intuitive's Patient Safety Claims

128. As I previously discussed, the restrictive Intuitive Service Agreement that hospitals were required to sign prohibited hospitals from permitting "any third party to modify, disassemble, reverse engineer, alter, or misuse the System or Instruments and

Accessories.”³⁰³ The Intuitive Service Agreement also stated that the license to use an EndoWrist instrument with the da Vinci surgical robot purchased by the hospital “expires once an Instrument or Accessory is used up to its maximum number of uses, as is specified in the Documentation accompanying the Instrument or Accessory.”³⁰⁴ At deposition, Mr. Vavoso testified that he understood this term of the Intuitive Service Agreement to mean that the EndoWrist “instruments have a designated number of lives. And once those lives are used, then the license has expired.”³⁰⁵ I understand that Intuitive claims that this requirement was necessary due to patient safety concerns associated with allowing third parties to repair its EndoWrist surgical instruments.³⁰⁶

129. I understand that, in his expert report in this matter, Plaintiff’s regulatory expert, Mr. Philip J. Phillips, addresses a recent action taken by the FDA with respect to 510(k) clearance for the marketing of reprocessed Intuitive Surgical da Vinci model S/Si EndoWrist instruments by a company called Iconocare Health (“Iconocare”).³⁰⁷ In its September 2022 letter to Iconocare, the FDA concluded:

The design, materials, and intended use of the 8mm Monopolar Curved Scissor Instruments, after an additional ten (10) reuse cycles are equivalent to the predicate device. The mechanism of action of the subject device is identical to the predicate device in that the same standard mechanical design, materials, and sizes are utilized. There are no changes to the claims, intended use, clinical applications, patient population, or method of operation. The change in device specifications is to extend the useful life of the 8mm Monopolar Curved Scissor Instruments.³⁰⁸

³⁰³ Vavoso Deposition at 194:11-195:11, Exhibit 24 at Intuitive-00067540. Glenn Vavoso of Intuitive testified that he was not “aware of any contract with any hospital that does not include this use of system term.” See Vavoso Deposition at 195:4-11.

³⁰⁴ Vavoso Deposition at 195:17-196:14, Exhibit 24 at Intuitive-00067542. At deposition, Glenn Vavoso of Intuitive was unable to “identify any sales contract with the hospital that does not include the language in paragraph 8.” See Vavoso Deposition at 198:24-199:2.

³⁰⁵ Vavoso Deposition at 196:15-197:6.

³⁰⁶ See, for example, Deposition of Myriam Curet MD, May 7, 2021 (hereafter “Curet Deposition”) at 107:7-25.

³⁰⁷ Telephone conversation with Mr. Philip J. Phillips, dated December 1, 2022.

³⁰⁸ FDA, Letter to Iconocore Health, “RE: K210478,” dated November 15, 2022. Available at https://www.accessdata.fda.gov/cdrh_docs/pdf21/K210478.pdf.

I understand that Mr. Phillips opines that Iconocare demonstrated to FDA's satisfaction that modifying and relabeling each presumably-used Intuitive device to create a reprocessed device, with an additional 10 uses, is substantially equivalent to the predicate devices.³⁰⁹ I understand that, in Mr. Phillip's opinion, this establishes that the "intended use" of Intuitive's marketed EndoWrist device is the same as the intended use of Iconocare Health's newly-cleared device.³¹⁰

130. I understand Mr. Phillips concludes that Iconocare provided performance data to the FDA that demonstrated that the reprocessed devices are as safe and effective as the predicate devices and operate as originally intended.³¹¹ I also understand that Mr. Phillips further asserts that it is not surprising that FDA determined the Iconocare EndoWrist device to be substantially equivalent, as it is virtually identical to the predicate devices in all respects and one would anticipate that they are as safe and effective.³¹² Based on Mr. Phillip's analysis of the FDA's recent clearance of reprocessed EndoWrist instruments, I understand Mr. Phillips has concluded that Intuitive's claims that it is unsafe to use EndoWrist surgical instruments more than the maximum number of times imposed by Intuitive appears to be inconsistent with the determination made recently by the FDA.

131. For the purposes of my analysis contained in this Expert Report, I rely on the opinions of Mr. Philip Phillips regarding the FDA's assessment of the safety of reprocessed EndoWrist surgical instruments as compared to Intuitive's newly manufactured replacement EndoWrist surgical instruments. Additional evidence I have reviewed is consistent with Mr. Phillips' conclusions regarding the FDA's assessment of the safety of reprocessed EndoWrist instruments. For example, at deposition, Nicky Goodson, Senior Director for Service Operations at Intuitive, testified that Intuitive has not done testing of any kind to determine whether refurbished or repaired EndoWrists

³⁰⁹ Telephone conversation with Mr. Philip J. Phillips, dated December 1, 2022.

³¹⁰ Telephone conversation with Mr. Philip J. Phillips, dated December 1, 2022.

³¹¹ Telephone conversation with Mr. Philip J. Phillips, dated December 1, 2022.

³¹² Telephone conversation with Mr. Philip J. Phillips, dated December 1, 2022.

performed by third-party repairers similar to SIS would be unsafe to use with the da Vinci surgical robot in MIST surgery.³¹³ Ms. Goodson further testified:

Q. Aside from your personal opinion, do you have any evidence that EndoWrists repaired or refurbished by Restore or Rebotix have put patients at risk?

A. No.³¹⁴

Grant Duque, Director of Core Instruments Design Engineering at Intuitive, similarly testified that he was not aware of any testing that had been done on refurbished EndoWrist instruments performed by third-party repairers similar to SIS.³¹⁵ Furthermore, at deposition, Dan Jones, Intuitive's Director of External Affairs, testified that when sending letters outlining patient safety claims to hospitals that were using third party repairers to refurbish EndoWrist instruments, he was unaware of the types of tests those third-party repairers were performing to ensure the safety of the EndoWrist instruments they refurbished.³¹⁶

132. The evidence discussed above is consistent with the opinions contained in Mr. Phillips' expert report that, despite Intuitive's claims to the contrary, EndoWrist instruments repaired or reprocessed by third parties such as SIS were equally as safe as the newly manufactured replacement EndoWrist instruments hospitals were required to purchase directly from Intuitive.

- ii. Intuitive Used its Alleged Misconduct in the EndoWrist Repair and Replacement Market to Continue to Charge Supra-Competitive Prices for the Replacement of EndoWrist Instruments, Causing Harm to Competition

133. When a firm possesses monopoly (or market) power³¹⁷ in a well-defined antitrust market, it is able to raise the price of that good above the marginal cost of production and earn excess (that is, supra-competitive) profits on the sales of that good. The exercise of

³¹³ Goodson Deposition at 243:2-244:6. See, also, DeSantis Deposition at 213:16-216:21, 244:15-245:11.

³¹⁴ Goodson Deposition at 257:7-10.

³¹⁵ Deposition of Grant Duque, November 8, 2022 at 149:9-151:8.

³¹⁶ Deposition of Dan Jones, November 10, 2022 at 73:4-74:7.

³¹⁷ The term "monopoly power" is often used interchangeably with "market power" by economists. I view monopoly power as the most extreme version of market power. That is, a firm with a high share of the market may have *market power* even when there are two or more firms in a well-defined antitrust market.

monopoly power results in harm to competition, which reduces consumer welfare and creates inefficiency in the economy. This exercise of monopoly power forms a central focus of antitrust economics. Evidence I have reviewed demonstrates that Intuitive abused its monopoly power in the EndoWrist Repair and Replacement Market (monopoly power it maintained through its allegedly unlawful tying of the purchase of EndoWrist surgical instruments from Intuitive to the purchase of da Vinci surgical robots, as discussed above). Intuitive's abuse of its monopoly power resulted in harm to competition as hospitals had little choice but to pay higher prices for replacement EndoWrist instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS. As Edward Harrich of Pullman Regional Hospital testified at deposition in a related matter involving third-party repairer Rebotix, "reducing the costs of EndoWrists by using the Rebotix Repair service improve[s] the hospital's profitability associated with procedures that used the da Vinci system."³¹⁸

134. As I discussed above, Intuitive earned a contribution margin of approximately 89 percent on sales of new replacement EndoWrist surgical instruments.³¹⁹ If Intuitive's allegedly unlawful conduct had not conferred substantial market power in the EndoWrist Repair and Replacement Market, it would not have been able to charge prices so far above marginal cost and earn the supra-normal profits it earned on EndoWrist surgical instruments. As I noted elsewhere, as a matter of economics, in the absence of market power, a firm's prices are driven toward the cost of production.³²⁰ Evidence I have reviewed demonstrates that, had Intuitive not engaged in its Alleged Misconduct and hospitals been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS, at least some hospitals would have paid lower prices for EndoWrist surgical instruments than they did in the actual world. I discuss this evidence in greater detail below.

³¹⁸ Harrich Deposition at 63:15-19.

³¹⁹ DeSantis Deposition at 249:18-22.

³²⁰ Carlton & Perloff at pp. 666-667.

135. Evidence I have reviewed indicates that the EndoWrist surgical instruments repaired by third parties such as SIS were viewed as functionally equivalent to the replacement EndoWrist surgical instruments sold by Intuitive. For example, in a January 2020 analyst report covering Intuitive, Deutsche Bank noted:

Repaired da Vinci instruments were all manufactured by Intuitive and designed to become disabled for use beyond 10x, but third parties like Restore Robotics have developed technologies to repair these used devices, confirm that functionality and condition have been restored to *de novo* specifications, and then ship them back to the hospitals for additional use.³²¹

Consistent with this finding, Deutsche Bank also noted that there was “[n]o evidence that repaired da Vinci instruments specifically pose a risk to patient safety – in fact, *au contraire*.”³²² Deutsche Bank added: “Bottom line regarding safety is that, despite Intuitive’s view on this point, any material threat to patient safety would surely have prompted immediate FDA field action to stop their usage, which has not been the case.”³²³

136. Also consistent with these findings, in a related matter involving another third-party repairer similar to SIS (Rebotix), Edward Harrich, Director of Surgical Services at Pullman Regional Hospital, testified that the surgeons, first assists, and scrub assists that Pullman Hospital that used “Rebotix-repaired EndoWrists” were not able to “discern any differences between the Rebotix-repaired EndoWrists and the EndoWrists that had not been repaired or serviced by Rebotix.”³²⁴ Mr. Harrich further testified that Pullman

³²¹ Intuitive-00552993-53014 at 52993 (emphasis in original). Deutsche Bank added: “Notably, these devices are typically repairable up to four times. Third party servicing of medical devices has been ongoing for decades, and FDA’s comfort around this practice regarding patient safety is quite clear.” See Intuitive-00552993-53014 at 52993.

³²² Intuitive-00552993-53014 at 52998 (emphasis in original).

³²³ Intuitive-00552993-53014 at 52998 (emphasis in original). In this report, Deutsche Bank included due diligence “feedback from da Vinci surgeons” regarding the use of EndoWrist surgical instruments that had been repaired by third-party repairers. See Intuitive-00552993-53014 at 53000-53002. One such surgeon noted that the “[c]linical experience to date has been positive, with no reports of device malfunction or adverse events.” See Intuitive-00552993-53014 at 53000. Another surgeon noted that the “[c]linical experience has been satisfactory, with no reports of device malfunction or adverse events.” See Intuitive-00552993-53014 at 53001. Another “Surgeon noted that the hospital has had no cases of device malfunction or adverse events, and based on this favorable trial phase experience usage is likely to expand over the next year or two.” See Intuitive-00552993-53014 at 53002.

³²⁴ Harrich Deposition at 38:8-39:3.

Hospital never “reject[ed] a Rebotix-repaired EndoWrist for any reason.”³²⁵ Similarly, in another related matter, Tyler McDonald of Conway Regional Medical Center testified that a group of surgeons at his hospital conducted a trial of EndoWrist surgical instruments repaired by Restore Robotics,³²⁶ and that, upon completing that trial, those surgeons “couldn’t tell any difference between [the repaired EndoWrist surgical instruments] and the other instruments that came directly from Intuitive.”³²⁷

137. Economic theory demonstrates that in a market for an interchangeable product, competition between two firms would result in lower prices than under a pure monopoly (like the one Intuitive was able to maintain during the Relevant Period as a result of its Alleged Misconduct), as suppliers would have competed with each other to raise their own sales at their competitor’s expense. Indeed, evidence indicates that Intuitive understood that price erosion would have occurred in the EndoWrist Repair and Replacement Market if third-party repair companies such as SIS were able to enter the market and compete effectively. As I discussed above, evidence I have reviewed demonstrates that Intuitive investigated responding to the growing competitive threat from lower-priced third-party repairers of EndoWrist surgical instruments (such as SIS) by selling refurbished EndoWrist surgical instruments at a discount off of the cost of the replacement EndoWrists it sells to hospitals (often referred to as Project Dragon).³²⁸ For instance, in July 2017, Intuitive created an internal presentation regarding an update on Project Dragon from earlier in the year “[g]iven the sensitivity to the price and margins of such a large revenue stream.”³²⁹ Regarding the benefits to hospitals of refurbished EndoWrist instruments, Intuitive stated: “A 20% discount is proposed. This discount

³²⁵ Harrich Deposition at 42:18-43:19.

³²⁶ I understand Restore Robotics pays “a sizable license fee” to use Rebotix’s patented Interceptor “technology to reset the usage counter on EndoWrist instruments for the da Vinci Si robot systems.” See United States District Court for the Northern District of Florida, *Restore Robotics LLC and Restore Robotics Repair LLC v. Intuitive Surgical, Inc.*, No. 5:19-cv-00055-MCR-MJF, First Amended Complaint, May 13, 2019 at ¶75; Papit Deposition at 71:21-72:14, 83:1-6; Deposition of David Mixner, June 10, 2021 at 13:23-14:6, 120:17-121:6.

³²⁷ McDonald Deposition at 13:20-17:25, 67:22-68:15.

³²⁸ Intuitive-00103456-478 at 459. Intuitive noted that these refurbished EndoWrist surgical instruments “will be equally capable to new.” See Intuitive-00103456-478 at 459.

³²⁹ Intuitive-00103456-478 at 457.

balances: RF instrument cost, requested I&A costs in various regions, and our DESIRED LEADERSHIP POSITION in robotics.”³³⁰ Intuitive added:

As a part of that leadership position, it seems important that Dragon be a tool to demonstrate our commitment to our customers. We have listened to their needs and could provide a solution for reduced pricing. However, the discount of 20% (versus a deeper 30% discount) maintains our position as an equal business partner and does not force us into a commodity position.³³¹

Intuitive also noted that the “[d]iscount applies whether they are shipped new or remanufactured instrument.”³³² With regards to how this program would help Intuitive maintain its “leadership position” in the face of the competitive threat from third-party repair companies, Intuitive stated:

Reprocessing SUD [single-use device] companies are commoditized and centralized with broad offerings. Currently, the closest parallel to our refurbished instrument is the reprocessed SUD market. This market is highly commoditized and centralized. The large players have very wide portfolios spanning EP, cardiac, lap products, etc. Given their broad offering and deep discounts of around 50% we would be challenged to compete should they enter with cleared, refurbished, robotic instruments. Even should they not enter we will be having sales discussions with purchasers who expect a deep discount on refurb or reprocessed devices.... unless we can position it otherwise.³³³

Also, regarding its “leadership position,” Intuitive stated that “if someone is going to pursue refurbishing of dV instruments it should be us as the OEM for the patients [sic] sake and for ours. For revenue reasons and for maintaining our leadership position,” adding:

If a large player were to enter with reprogramming or refurbishing we have lost our leadership position in this segment of robotics. Our users could vilify us for

³³⁰ Intuitive-00103456-478 at 458. Intuitive also noted: “First and foremost, Dragon is an opportunity for our customers to have improved running costs associated with da Vinci procedures.” See Intuitive-00103456-478 at 458.

³³¹ Intuitive-00103456-478 at 458. Intuitive added: “we are already seeing 3rd party companies enter with reprogrammed dV instruments. By offering Dragon we can increase customer confidence in refurb, lower cost instruments as part of our mission to put Patients First.” See Intuitive-00103456-478 at 458.

³³² Intuitive-00103456-478 at 459.

³³³ Intuitive-00103456-478 at 459.

not extending lives or refurbishing sooner. And the good will/partnership equity that we could get for refurbishing is completely diminished. Additionally we lose the position to set what the discount should be for refurbished robotic instruments.³³⁴

138. Regarding Project Dragon, evidence I have reviewed indicates that, despite the benefits of the program to hospitals in the form of lower operational costs and to Intuitive itself in the form of allowing it to protect its “leadership position” from third-party repairers, Intuitive initially decided in August 2017 not to pursue this plan and offer refurbished EndoWrist surgical instruments to hospitals at a lower cost than replacement EndoWrist surgical instruments. Upon hearing of this decision, Mike Prindiville of Intuitive remarked that he believed the project was still “a wise strategic investment,” but that the “question is more timing (i.e. when do we really need a lower cost/revenue product for I&A) rather than any technical concerns.”³³⁵ In response to a September 2017 email from Katie Scoville regarding the decision not to pursue Project Dragon at the time, Dirk Barton of Intuitive stated:

I want to remark the following. In case we need to drop I+A pricing in some regions – to add the message in volume contracts that those sites would accept also partial deliveries based on refurbished material would avoid potential push back from competition – telling that we use our monopol[y] role to keep competition out.³³⁶

Mr. Barton added that “[p]otential usage of refurb material allows us to lower pricing.”³³⁷ I understand that, while Intuitive revisited the idea of offering refurbished EndoWrist surgical instruments at a discount off of replacement EndoWrist surgical instruments, the project was ultimately “never sellable” in the U.S., and Intuitive ended its refurbished EndoWrist surgical instrument efforts in the second quarter of 2020.³³⁸ In May 2021,

³³⁴ Intuitive-00103456-478 at 464.

³³⁵ Intuitive-00602576-78 at 76.

³³⁶ Intuitive-00604054-55 at 54.

³³⁷ Intuitive-00604054-55 at 54.

³³⁸ Scoville Deposition at 12:11-13:15, 91:24-92:21. Following its August 2017 decision not to pursue Project Dragon, Intuitive briefly revived a version of the project in April 2018 that was “not purely collections,” rather Intuitive was “investigating a partnership with a supplier (medline) who does kitting for products and can also do collections.” See Intuitive-00604127; Intuitive-00604123. However, the Project Dragon phase of Intuitive’s proposed refurbishment program ended in 2018. See Intuitive-00594883-4902

Katie Scoville of Intuitive testified that the company was not actively “exploring the possibility of refurbishing EndoWrists.”³³⁹

139. Consistent with Intuitive’s own expectations, evidence I have reviewed indicates that the cost to hospitals associated with repairing their EndoWrist surgical instruments through a third-party repairer such as SIS was significantly lower than the cost to purchase replacement EndoWrist surgical instruments from Intuitive.³⁴⁰ For example, upon learning in November 2019 that Marin General Hospital had been using SIS to repair its EndoWrist instruments, Intuitive assessed the competitive threat from SIS and learned that SIS was offering its repair services at a “40-50% discount” off of Intuitive’s replacement EndoWrists.³⁴¹ Intuitive further noted that Marin General Hospital was “very proud of this and celebrated the cost savings.”³⁴² Similarly, in September 2019, Intuitive executives discussed how to deal with an inquiry from UF Shands regarding the use of SIS’s services to save money by repairing its EndoWrist instruments, during which time Intuitive learned that UF Shands had been alerted to the cost savings by its Group Purchasing Organization, which noted:

Two of [its] members, Kaiser Permanente and Legacy Health System are capturing savings by using Intuitive Surgical Endowrist refurbishment products. Surgical Instrument Service Company (SIS) is now the only supplier providing refurbishment to Intuitive Surgical’s da Vinci EndoWrist. SIS offers a refurbished da Vinci EndoWrist at approximately 40% savings.³⁴³

at 4884. Further, around June 2019, began a pilot program that, like Project Dragon, “still concern[ed] the potential refurbishment of EndoWrists.” See Scoville Deposition at 116:4-118:5. This pilot program involved the collection of used EndoWrist surgical instruments to test the refurbishment process on a small scale and to help develop potential business models. See Intuitive-00594883-4902 at 4884; Scoville Deposition Exhibit 10. However, this refurbishment pilot program ended in 2020. See Intuitive-00594883-4902 at 4884. When asked why the program ended in 2020, Ms. Scoville testified: “We had piloted a sufficient amount -- we had gathered, I should say a sufficient amount of data to do the assessment and technical feasibility. And based on what we learned, we didn’t think that further assessment was a high enough priority project for the company.” See Scoville Deposition at 12:14-13:5. See, also, Goodson Deposition at 72:5-74:3.

³³⁹ Scoville Deposition at 13:10-15. See, also, Goodson Deposition at 72:5-74:3.

³⁴⁰ 30(b)(6) Posdal Deposition at 58:4-22.

³⁴¹ Intuitive-00110451-55 at 51.

³⁴² Intuitive-00110451-55 at 55.

³⁴³ Intuitive-00110252-54 at 54.

140. Similarly, at deposition in a related matter, Edward Harrich of Pullman Hospital testified that the average cost of an EndoWrist surgical instrument purchased from Intuitive was approximately \$2,000, whereas the average cost to have an EndoWrist surgical instrument serviced by Rebotix was approximately \$1,332, which amounted to annual savings to Pullman Hospital of \$62,400.³⁴⁴ Mr. Harrich further testified that Rebotix offered Pullman Hospital repaired EndoWrist surgical instruments at a 40 percent discount off of the cost of replacement EndoWrist instruments from Intuitive.³⁴⁵ In another related matter, Tyler McDonald of Conway Regional Medical Center testified that his hospital observed cost savings from using EndoWrist surgical instruments repaired by third parties, and that “Conway [would] still be refurbishing the instruments today if it could do so.”³⁴⁶ In a January 2020 analyst report covering Intuitive, Deutsche Bank noted that “[m]eaningful operating cost savings opportunity is the key driver compelling hospitals to consider using these repaired da Vinci instruments.”³⁴⁷ Relatedly, a letter sent by third-party repairer Rebotix to hospitals around August 2019 noted that using Rebotix to repair EndoWrist surgical instruments would provide “45% [a]verage saving per instrument,” which would amount to “[a]verage [s]avings of over \$200,000 per year, per S or Si robot.”³⁴⁸

141. Further, evidence I have reviewed demonstrates that the prices Intuitive charged for its EndoWrist surgical instruments were significantly higher than the prices charged by TransEnterix for the surgical instruments used in conjunction with its Senhance surgical robot. For example, in a 2017 internal Instruments & Accessories analysis, Intuitive noted that the “[c]ompetitive [p]osition” of TransEnterix’s Senhance core surgical instruments were that they offered “[u]nlimited” lives, lower per procedure cost” as compared to EndoWrist core surgical instruments.³⁴⁹ Steven D. Schwaitzberg of

³⁴⁴ Harrich Deposition at 68:8-69:4.

³⁴⁵ Harrich Deposition at 88:16-89:14.

³⁴⁶ McDonald Deposition at 17:20-25.

³⁴⁷ Intuitive-00552993-53014 at 52993. As part of this analyst report, Deutsche Bank sought feedback from two hospital supply chain managers (one that oversees purchasing for nine hospitals in the Northeast and the other that is the “SVP of purchasing for a major hospital network comprising 28 hospitals across several states”), who both noted that their “team’s financial analysis points to ‘fairly substantial’ operating cost savings opportunity with usage of repaired instruments.” See Intuitive-00552993-53014 at 53003-53004.

³⁴⁸ Intuitive-00372699-2703 at 2702-2703.

³⁴⁹ Intuitive-00292544-2628 at 2556.

University of Buffalo's Department of Surgery noted in a 2019 interview that a "recent internal review [performed by Kaleida Health in Buffalo, NY] revealed an average instrument cost of \$3,400 per *da Vinci* procedure, which is significantly higher than the projected \$800–1,600 instrument costs for *Senhance*."³⁵⁰ A February 2018 Piper Jaffrey analyst report covering Intuitive found that, despite the surgical robots themselves being priced similarly, "[o]f particular interest to hospitals is the lower per procedure cost of *Senhance* (roughly one-half of what [Intuitive] charges)," adding that one of the pros of TransEnterix's *Senhance* as compared to Intuitive's *da Vinci* is that "[c]laims per-procedure pricing similar to current laparoscopic procedures (~\$700), mainly driven by reusable instruments with minimal disposables per case (for example, each instrument can be used, according to the company, 150-200 times compared to *da Vinci* at ~10-20)."³⁵¹

142. Evidence I have reviewed demonstrates that, had Intuitive not engaged in its Alleged Misconduct and hospitals been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS, at least some hospitals would have paid lower prices for EndoWrist surgical instruments than they did in the actual world. Evidence I have reviewed also demonstrates that Intuitive's Alleged Misconduct caused harm to competition in the tied market (the EndoWrist Repair and Replacement Market) in that hospitals had little choice but to pay higher prices for replacement EndoWrist instruments from Intuitive in order to use their *da Vinci* surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS.

143. For example, in a February 2020 analyst report in covering the "third party risk" to Intuitive's Instruments & Accessories business segment (which includes the sale of EndoWrist instruments), Deutsche Bank included Intuitive's "[l]everaging its dominant market position" as a "[m]itigant[] to [t]hird-[p]arty [e]ncroachment," adding:

While some hospitals are now starting to question the legality/enforceability of contract terms of service, there are also those whose surgeons are simply

³⁵⁰ Perez et al. at p. 6.

³⁵¹ Intuitive-00364420-444 at 423.

unwilling to risk losing access to Intuitive's technologies. We spoke with a supply chain executive of a major academic center that recently began using repaired da Vinci instruments, but upon receipt of an ensuing cease-and-desist notice from the company's lawyers, stopped.³⁵²

This assessment of the effect of Intuitive "[l]everaging its dominant market position" is consistent with the evidence discussed earlier in this Expert Report regarding Intuitive's successful efforts to leverage its restrictive Intuitive Service Agreement that hospitals were required to sign with every purchase of a da Vinci surgical robot to prevent hospitals from repairing their EndoWrist surgical instruments through third parties such as SIS, thus leaving hospitals with little choice but to pay higher prices for replacement EndoWrist instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS.

144. Further, an October 2018 "Qualitative IDI Research Report" prepared by Advantis for Intuitive found:

Cost is still a concern for users of [robotic assisted surgeries], and this can impact the choice of surgical technique (e.g., not using the robot for simple cases), but is more often expressed as a frustration felt due to the monopoly position that da Vinci has, which requires hospitals to buy equipment and maintenance for their da Vinci system directly, with no competition that might improve pricing or generate innovation.³⁵³

A 2013 article titled "The robotic surgery monopoly is a poor deal" noted that "Intuitive Surgical can command high premiums seemingly because of its monopoly position as the sole supplier of soft tissue robotic surgical equipment."³⁵⁴ Also, in November 2016, Dr. William Mayfield, Chief of Surgery at Wellstar Health System in Georgia, stated the following regarding Intuitive:

³⁵² DeSantis Deposition Exhibit 11 at Intuitive-00566074.

³⁵³ Intuitive 00246469-491 at 489 (emphasis in original).

³⁵⁴ Abhishek Trehan and Tristan J. Dunn, "The robotic surgery monopoly is a poor deal," *The BMJ*, Vol. 347, December 19, 2013, 1-2 at p. 1.

As a final note, the capital and carrying costs are still extremely high for Intuitive Surgical products. This has been tolerated (and I do not use the term lightly) in a monopoly marketplace. Demonstration of value at the hospital level under our current circumstances is challenging. Although the business principles of margins and return to investors is ‘standard in the industry’, as I described to you, the current business model of medical technology companies is unsustainable on a global scale. Our rising surgical supply costs are incompatible with the value delivered or return obtained. Competition in your space will have some effect on your business, and I urge you to stay ahead of the curve. There may be some pent up emotional backlash reflected in future sales when competition appears.³⁵⁵

145. In response to a November 2019 request for quotes from customers from a recent Intuitive study regarding the cost associated with Intuitive’s products, Kelvin Tsai of Intuitive provided a summary of quotes from surgeons, hospital administrators/executives, OR staff, and robotic coordinators.³⁵⁶ One surgeon in Mr. Tsai’s summary stated the following regarding Intuitive: “**Market monopoly, expensive equipment.**”³⁵⁷ One hospital administrator/executive stated: “Their robot products are of great quality, but **they know they don’t have any competition** for their disposables. As a result, their prices are expensive.”³⁵⁸ Similarly, one OR staff member in Mr. Tsai’s summary stated that the “**price of [Intuitive’s] instruments and disposables are an extremely high amount,**” with another OR staff member stating that Intuitive is “[e]xpensive & **had the market cornered for a long time resulting in overpricing.**”³⁵⁹

³⁵⁵ Intuitive-00141567-68 at 67.

³⁵⁶ Intuitive-00133628-630.

³⁵⁷ Intuitive-00133628-630 at 628 (emphasis in original). Another surgeon in Mr. Tsai’s summary said Intuitive “[p]ush[es] their product and do[es] **not allow for other modes such as laparoscopy** and it’s not ok as their product is not proven. Despite high usage, **I can’t wait for competitors.**” See Intuitive-00133628-630 at 628 (emphasis in original).

³⁵⁸ Intuitive-00133628-630 at 628 (emphasis in original). Another hospital administrator/executive in Mr. Tsai’s summary described Intuitive in the following way: “Poor partner, lack transparency, **no negotiation on pricing**, poor explanations of defective devices, sales team too forceful, borderline deceptive information.” See Intuitive-00133628-630 at 628 (emphasis in original). Similarly, another hospital administrator/executive in Mr. Tsai’s summary was quoted stating that Intuitive is “not easy to work with. **They have a monopoly**, just wait for a competitor to move the business.” See Intuitive-00133628-630 at 628 (emphasis in original).

³⁵⁹ Intuitive-00133628-630 at 628 (emphasis in original).

Also, a robotic coordinator in Mr. Tsai's summary said Intuitive made "[e]xcellent products, but **expensive and have a monopoly** on most robotic supplies."³⁶⁰

146. Further, following the expiration of their EndoWrist surgical instruments,³⁶¹ hospitals are required to dispose of expired EndoWrist surgical instruments and, in order to continue using their da Vinci surgical robots, must purchase replacement EndoWrist surgical instruments directly from Intuitive.³⁶² However, as noted above, EndoWrist surgical instruments are typically reparable multiple times.³⁶³

147. Thus, absent the Alleged Misconduct, each new EndoWrist instrument purchased by a hospital could typically be repaired multiple times by a third-party repairer such as SIS at a lower cost, as opposed to having little choice but to pay a higher price for a new replacement EndoWrist surgical instrument every time a given EndoWrist surgical instrument reached the maximum use limit imposed by Intuitive, as was the case in the actual world.³⁶⁴ Therefore, had hospitals been able to extend the useful life of their EndoWrist surgical instruments by having them repaired multiple times through third-party repairers such as SIS, they could have reaped the cost savings of repairing their EndoWrist surgical instruments rather than replacing them several times over before it was necessary to purchase a new replacement EndoWrist surgical instrument from

³⁶⁰ Intuitive-00133628-630 at 628 (emphasis in original). Another robotic coordinator in Mr. Tsai's summary said Intuitive is "the only company with robotic surgical stuff, but that doesn't mean it's great. It's **super overpriced and hyped up**." See Intuitive-00133628-630 at 628 (emphasis in original).

³⁶¹ Evidence I have reviewed indicates that Intuitive typically set the maximum number of uses for EndoWrist surgical instrument at ten. See, for example, DeSantis Deposition at 137:20-138:6; Intuitive 2021 SEC Form 10-K at pp. 8, 58. I understand that in October 2020, Intuitive introduced its Extended Use Program that allowed select da Vinci Xi and da Vinci X EndoWrist surgical instruments to be used twelve to 18 times, as compared to the typical ten uses. See Intuitive 2021 SEC Form 10-K at pp. 8, 58.

³⁶² Intuitive-00091257-1351 at 1272, 1274, 1289, 1291; McDonald Deposition at 13:13-19.

³⁶³ See, for example, Intuitive-00552993-53014 at 52993.

³⁶⁴ At deposition, Edward Harrich of Pullman Regional Hospital testified that Intuitive's maximum use restriction on EndoWrist surgical instruments and an inability to have their EndoWrist surgical instruments repaired by a third-party repair company forced Pullman to "buy additional EndoWrists that [it] otherwise wouldn't purchase," adding: "Well, soon as -- as soon as we hit our ten lives or whatever the limit number is on that instrument, we will have to purchase new ones and we can't use them any further." See Harrich Deposition at 30:4-18. Similarly, Stacey Donovan of Evergreen hospital testified: "Q. Do the maximum use restrictions that Intuitive imposes on EndoWrists force Evergreen to purchase more EndoWrists than it otherwise would purchase? [...] THE WITNESS: I don't -- I don't know how to answer that because we don't have the option to not -- to continue to use those instruments without purchasing new ones when they reach end of life." See Donovan Deposition at 24:6-14. In a related matter, Tyler McDonald of Conway Regional Medical Center testified: "Q. (By Mr. Berhold) When an instrument reaches the usage limit, does Conway have to purchase a new one? A. Yes. Q. And why is that? A. The instrument no longer works with the robot." See McDonald Deposition at 13:13-19.

Intuitive. As Deutsche Bank noted in a February 2020 analyst report in covering the “third party risk” to Intuitive’s Instruments & Accessories business segment (which includes the sale of EndoWrist instruments), asserted:

And even with this modest [4-6 percent] unit share capture, the resultant impact to Intuitive’s top-line would be amplified given that each instrument can be repaired multiple times. In our base case scenario of 5% *de novo* unit share capture in 2021 and the assumption that each instrument is repaired 3x on average, our analysis indicates a top-line hit on the order of \$193 million or 3.4% of total company sales in 2021.³⁶⁵

148. The evidence discussed above demonstrates that Intuitive’s Alleged Misconduct caused harm to competition in that, as a result, hospitals had little choice but to pay higher prices for replacement EndoWrist instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS. This evidence is consistent with the evidence I discussed earlier in this Expert Report demonstrating that more hospitals would have had their EndoWrist surgical instruments repaired more often than they otherwise did had it not been for Intuitive’s exclusionary conduct in the form of its requirement that all hospitals enter into the Intuitive Service Agreement as a condition of their purchase of a da Vinci surgical robot, as well as Intuitive’s continued enforcement of the Intuitive Service Agreement.

³⁶⁵ DeSantis Deposition Exhibit 11 at Intuitive-00566056 (emphasis in original). See, also, Intuitive-00552993-53014 at 53007.

VI. Conclusions

149. Based on my analyses and research into the U.S. market for MIST Surgical Robots and EndoWrist Repair and Replacement Market, as well as my training and experience in economics, I have concluded that the market for MIST Surgical Robots in the United States constitutes a relevant antitrust market with respect to the tying market for evaluating the Alleged Misconduct. I have also concluded that the market for EndoWrist Repair and Replacement Market in the United States constitutes a separate relevant antitrust market with respect to the tied market for evaluating the Alleged Misconduct. I have also concluded that Intuitive possessed monopoly power in the U.S. market for MIST Surgical Robots during the Relevant Period. Based on my training and experience in economics as well as my research and analysis into the relevant antitrust markets at issue here, I have also concluded that Intuitive used its monopoly power in the market for MIST Surgical Robots to maintain its monopoly in the EndoWrist Repair and Replacement Market in the U.S. during the Relevant Period. I have also concluded as a matter of economics that Intuitive's Alleged Misconduct was anticompetitive and resulted in harm to competition in that hospitals had little choice but to pay higher prices for replacement EndoWrist surgical instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have paid had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS.

A handwritten signature in blue ink that reads "Russell L. Lamb, PhD". The signature is written in a cursive style with a horizontal line underlining the name.

Russell L. Lamb, Ph.D.

December 2, 2022

Appendix A



Russell Lamb, Ph.D.

President

Monument Economics Group

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Professional Summary

Russell Lamb is an expert in antitrust economics and has testified concerning antitrust liability, impact, and damages. He has an extensive background in applied econometrics and has developed econometric models to measure damages in a number of matters involving allegations of horizontal price fixing. He has provided expert testimony in State and Federal Courts in the United States and in Canada on a range of issues including class-certification and economic damages in antitrust, RICO and consumer fraud matters. In addition, he has provided expert advice to client attorneys at all levels of the litigation. Dr. Lamb has an extensive background in the analysis of domestic and international agricultural markets and has authored more than 50 articles in peer-reviewed economics journals, trade press, and major newspapers.

Dr. Lamb's work has been cited by courts in certifying classes in the United States and Canada. For example, in *In re Aftermarket Automotive Lighting Products Antitrust Litigation*, the court held that his analysis provided "a sufficient basis from which to conclude that Plaintiffs would adduce common proof concerning the effect of Defendants' alleged price-fixing conspiracy on prices class members paid." In certifying the Class in *In re: Titanium Dioxide Antitrust Litigation*, the Court said, "This Court finds that Dr. Lamb's regression analysis accurately reflects the characteristics of the titanium dioxide industry, and the facts in this case." In *In Re: Domestic Drywall Antitrust Litigation*, the Court cited extensively to Dr. Lamb's analysis in its decision to certify the Class: "Dr. Lamb's expert opinion fits the facts of the case, is relevant, and is therefore admissible to show classwide injury and measurable damages in support of Plaintiffs' Motion for Class Certification. [...]"

The Court [...] has thoroughly considered Dr. Lamb's opinion in its decision on the DPPs' Class Certification Motion." In the Canadian LCD Competition Act Class Action, the Court held that Dr. Lamb's analysis provided "evidence of a viable methodology for the determination of loss on a class-wide basis." In *In re: Puerto Rican Cabotage Litigation*, the Court held that "Dr. Lamb [had] set forth a reputable and workable model for determining damages as to individual class members." In certifying the class in *Clarke and Rebecca Wixon, et al. v. Wyndham Resort Development Corp., et al.*, the Court held that "Dr. Lamb [had] presented a plausible class-wide method of proof." In certifying the class in *Eugene Allan, et al. v. Realcomp II, Ltd., et al.*, the Court held that "the Plaintiffs have produced sufficient evidence that common proofs will yield a finding of class-wide damages that predominates over any specific individualized damages. The Lamb Report and Lamb Reply are sufficient to establish this fact." Furthermore, Dr. Lamb was the Indirect Purchaser Plaintiffs' expert in the *In re: Polyurethane Foam Antitrust Litigation* matter, which was certified by the Court in April 2014.

With regard to agricultural economics, Dr. Lamb has a particular expertise in agricultural markets and has undertaken extensive original research and econometric analysis on markets for agricultural commodities. His articles on agricultural economics have been published in peer-reviewed journals, trade press, and major newspapers. Dr. Lamb regularly presents at conferences on topics including the state of the U.S. Economy and farm policy.

Prior to co-founding Monument Economics Group, Dr. Lamb was a Senior Vice President at Nathan Associates Inc., where he directed the firm's litigation consulting practice nationally. Dr. Lamb previously served as a Principal at AACG in Arlington, VA, and as Managing Director and DC Office Head at Econ One Research. He earlier served as an Assistant Professor of Agricultural Economics and faculty member of the Graduate Group in Economics at North Carolina State University and as an Economist and Senior Economist in the Federal Reserve System of the United States, at the Federal Reserve Board and the Federal Reserve Bank of Kansas City.

Education

- Ph.D., Economics, University of Pennsylvania, 1994
- M.A., Economics, The University of Maryland, 1989
- B.A., Economics, The University of Tennessee, 1987

Expert Testimony Offered

2022 *Anthony Oliver, et al. v. American Express Company, et al.*

- United States District Court Eastern District of New York
- Case No. 1:19-cv-00566
- Expert Report, September 30, 2022
- Supplemental Expert Report, October 19, 2022
- Opinion concerning class certification and damages issues
- Retained by Berman Tabacco

Las Vegas Sun, Inc. v. Sheldon Adelson, et al.

- United States District Court District of Nevada
- Case No. 2:19-cv-01667
- Expert Report, September 19, 2022
- Opinion concerning damages issues
- Retained by Lewis Roca Rothgerber Christie LLP

Value Drug Company v. Takeda Pharmaceuticals U.S.A., Inc., et al.

- United States District Court Eastern District of Pennsylvania
- Case No. 21-CV-3500
- Expert Report, July 25, 2022
- Amended Expert Report, July 28, 2022
- Testified at deposition, August 17, 2022
- Testified at deposition, September 15, 2022
- Testified at class certification hearing, November 1, 2022
- Expert Report, November 17, 2022
- Opinion concerning class certification and damages issues
- Retained by Berger & Montague, P.C.

Serge Asselin v. Ainsî Canada, Inc. et al.

- Cour Supérieure District de Québec
- Case No. 200-06-000203-169
- Expert Report, May 31, 2022
- Opinion concerning market factors
- Retained by Siskinds LLP, Sotos LLP

In Re Caustic Soda Antitrust Litigation

- United States District Court Western District of New York
- Case No. 1:19-cv-00385-EAW-MJR
- Expert Report, April 25, 2022
- Testified at deposition, June 6, 2022
- Expert Reply Report, August 25, 2022
- Testified at deposition, September 23, 2022
- Opinion concerning class certification and damages issues

- Retained by CERA LLP

Boothe Farms, Inc., et al. v. The Dow Chemical Co., et al.

- United States District Court Eastern District of Arkansas Northern Division
- Case No. 3:19-cv-00264-DPM
- Expert Report, April 15, 2022
- Supplemental Expert Report, April 20, 2022
- Testified at deposition, May 4, 2022
- Declaration, May 19, 2022
- Opinion concerning damages issues
- Retained by Lieff Cabraser Heimann & Bernstein, LLP

2021 *In Re: Takata Airbag Product Liability Litigation*

- United States District Court Southern District of Florida Miami Division
- MDL No. 2599
- Expert Report, December 23, 2021
- Testified at deposition, January 25, 2022
- Opinion concerning class certification and damages issues
- Retained by Podhurst Orseck

In Re: Broiler Chicken Antitrust Litigation

- United States District Court Northern District of Illinois Eastern Division
- Case No. 1:16-cv-08637
- Expert Report, December 20, 2021
- Testified at deposition, February 8, 2022
- Expert Rebuttal Report, July 29, 2022
- Testified at deposition, September 1, 2022
- Opinion concerning damages issues
- Retained by Polsinelli

KPH Healthcare Services, Inc. a/k/a Kinney Drugs, Inc. v Gilead Sciences, Inc., et al.

- United States District Court Northern District of California San Francisco Division
- Case No. 3:20-cv-06961-EMC
- Expert Report, October 19, 2021
- Declaration, February 25, 2022
- Declaration, April 13, 2022
- Declaration, April 26, 2022
- Testified at deposition, May 18, 2022
- Expert Merits Report, June 28, 2022
- Expert Rebuttal Report, June 30, 2022
- Testified at deposition, July 19, 2022
- Testified at deposition, July 25, 2022
- Expert Rebuttal Report, August 12, 2022

- Expert Rebuttal Damages Report, August 16, 2022
- Testified at deposition, August 31, 2022
- Opinion concerning class certification and damages issues
- Retained by Roberts Law Firm, P.A.

In Re: Mallinckrodt plc, et al.

- United States Bankruptcy Court District of Delaware
- Case No. 20-12522 (JTD)
- Expert Report, August 13, 2021
- Expert Reply Report, August 26, 2021
- Testified at deposition, September 8, 2021
- Supplemental Expert Report, October 29, 2021
- Testified at trial, November 12 and 15, 2021
- Expert Reply Report, December 1, 2021
- Testified at trial, December 16, 2021
- Opinion concerning damages
- Retained by Eimer Stahl LLP and Willkie Farr & Gallagher LLP

Rebotix Repair LLC v. Intuitive Surgical, Inc.

- United States District Court Middle District of Florida Tampa Division
- Case No. 8:20-cv-02274-VMC-TGW
- Expert Report, July 26, 2021
- Testified at deposition, October 19, 2021
- Opinion concerning monopolization issues
- Retained by Dovel & Luner

Irene Breckon and Gregory Sills v. Alsaker AS, et al.

- Federal Court of Canada
- Court File No. T-1664-19
- Expert Report, July 1, 2021
- Expert Reply Report, July 5, 2022
- Opinion concerning class certification issues
- Retained by Siskinds LLP, Sotos LLP, and Koskie Minsky LLP

Gazarek Realty Holdings Ltd., et al. v. Corning Incorporated, et al.

- Ontario Superior Court of Justice
- Court File No. CV-16-549735-00CP
- Expert Report, April 15, 2021
- Opinion concerning class certification issues
- Retained by Camp Fiorante Matthews Mogerma LLP, Sotos LLP, Siskinds LLP

Kate O'Leary Swinkels v. ZF Friedrichshafen Ag, et al.

- Ontario Superior Court of Justice
- Court File No. CV-18-00604648-00CP
- Expert Report, April 15, 2021

- Expert Reply Report, January 19, 2022
- Opinion concerning class certification issues
- Retained by Camp Fiorante Matthews Mogerman LLP, Sotos LLP, Siskinds LLP

David Regan v. Masonite International Corporation, et al.

- Federal Court of Canada
- Court File No. T-1049-20
- Expert Report, March 31, 2021
- Opinion concerning class certification issues
- Retained by Siskinds LLP

In Re: JELD-WEN Holding, Inc. Securities Litigation

- United States District Court for the Eastern District of Virginia Richmond Division
- Case No. 3:20-CV-00112-JAG
- Expert Declaration, January 4, 2021
- Expert Reply Declaration, February 15, 2021
- Testified at deposition, February 26, 2021
- Opinion concerning anticompetitive conduct issues
- Retained by Labaton Sucharow LLP and Robbins Gellar Rudman & Dowd LLP

2020 *In Re Namenda Indirect Purchaser Antitrust Litigation*

- United States District Court Southern District of New York
- Case No. 1:15-CV-06549
- Expert Report, July 6, 2020
- Testified at deposition, July 23, 2020
- Expert Reply Report, September 21, 2020
- Opinion concerning class certification and damages issues regarding indirect purchasers
- Retained by Miller Law LLC and Safirstein Metcalf LLP

In Re: Interior Molded Doors Antitrust Litigation

- United States District Court for the Eastern District of Virginia Richmond Division
- Case No. 3:18-CV-00718-JAG
- Class Certification and Trial Expert Report, January 31, 2020
- Testified at deposition, March 4, 2020
- Class Certification and Trial Expert Reply Report, June 9, 2020
- Testified at deposition, July 16, 2020
- Opinion concerning class certification and damages issues
- Retained by Spector Roseman Kodroff & Willis, P.C., and Berger & Montague, P.C.

2019 *In Re Zetia (Ezetimibe) Antitrust Litigation*

- United States District Court for the Eastern District of Virginia Norfolk Division
- Case No. 2:18-MD-02836-RBS-DEM
- Expert Declaration, November 18, 2019
- Testified at deposition, December 20, 2019
- Expert Trial Declaration, January 13, 2020
- Expert Reply Declaration, February 20, 2020
- Testified at class certification hearing, May 1, 2020
- Expert Trial Reply Declaration, May 8, 2020
- Expert Supplemental Declaration, May 15, 2020
- Testified at deposition, June 9, 2020
- Opinion concerning class certification and damages issues
- Retained by Miller Law LLC and Motley Rice LLC

GAËTAN ROY c. JTEKT Corporation & al. (Bearings/Roulements)

- Cour Supérieure District de Québec
- Case No. 200-06-000159-130
- Expert Report, November 12, 2019
- Opinion concerning class certification issues
- Retained by Siskinds LLP, Sotos LLP

First Impressions Salon, Inc., et al., v. National Milk Producers Federation, et al.

- United States District Court for the Southern District of Illinois
- Case No. 3:13-cv-00454-NJR-SCW
- Expert Report, January 4, 2019
- Testified at deposition, February 13, 2019
- Expert Reply Report, May 3, 2019
- Testified at deposition, May 17, 2019
- Opinion concerning class certification and damages issues
- Retained by Barrett Law Group, NastLaw LLC, and Roberts Law Firm

Sheridan Chevrolet Cadillac Ltd., et al., v. JTEKT Corporation, et al.

- Ontario Superior Court of Justice
- Court File No. CV-13-478644-00CP
- Expert Report, January 2, 2019
- Opinion concerning class certification issues
- Retained by Sotos LLP

2018 *Sheridan Chevrolet Cadillac Ltd., et al., v. Hitachi Ltd., et al.*

- Ontario Superior Court of Justice
- Court File No. CV-14-506683-00CP
- Expert Report, October 4, 2018
- Opinion concerning class certification issues
- Retained by Sotos LLP

In Re Suboxone Direct Purchaser Antitrust Litigation

- United States District Court for the Eastern District of Pennsylvania
- Case No. 2:13-MD-02445-MSG
- Expert Report, September 18, 2018
- Testified at deposition, October 30, 2018
- Merits Expert Report, November 30, 2018
- Expert Rebuttal Report, January 11, 2019
- Testified at deposition, January 17, 2019
- Expert Merits Rebuttal Report, April 26, 2019
- Testified at deposition, June 12, 2019
- Opinion concerning class certification, merits, and damages issues
- Retained by Berger & Montague, P.C.; Garwin Gerstein & Fisher LLP; and Faruqi & Faruqi LLP

William Rushing, et al. v. Williams-Sonoma, Inc., et al.

- United States District Court Northern District of California, San Francisco Division
- Case No. 3:16-cv-01421-WHO
- Expert Report, July 25, 2018
- Opinion concerning class certification issues
- Retained by Rose Law Group, PC

The Hospital Authority of Metropolitan Government of Nashville and Davidson County, Tennessee, et al. v. Momenta Pharmaceuticals, Inc., et al.

- United States District Court Middle District of Tennessee Nashville Division
- Civil Action No. 15-cv-1100
- Testified at deposition, October 10, 2018
- Expert Report, June 22, 2018
- Expert Reply Report, September 21, 2018
- Testified at class certification hearing, May 13, 2019
- Declaration, May 21, 2019
- Expert Merits Report, May 24, 2019
- Declaration, June 18, 2019
- Expert Report, July 5, 2019
- Expert Supplemental Reply Report, July 5, 2019
- Testified at hearing, July 12, 2019
- Expert Merits Reply Report, July 29, 2019
- Testified at deposition, August 13, 2019
- Opinion concerning class certification and damages issues regarding indirect purchasers
- Retained by Lieff Cabraser Heimann & Bernstein, LLP

2017 *Fady Samaha and Urlin Rent a Car Ltd. v. Yamashita Rubber Co., Ltd., et al.*

- Ontario Superior Court of Justice

- Court File No. CV-13-472262-00CP
- Expert Report, December 4, 2017
- Supplemental Report, July 13, 2018
- Expert Reply Report, January 23, 2020
- Testified at deposition, April 20, 2020
- Supplemental Report, September 30, 2020
- Opinion concerning class certification issues
- Retained by Siskinds LLP

In Re Lamictal Direct Purchaser Antitrust Litigation

- United States District Court New Jersey
- Case No. 1 2-95 -WHW-MCA
- Expert Report, November 6, 2017
- Revised Expert Reply Report, April 16, 2018
- Testified at deposition, June 6, 2018
- Opinion concerning class certification and damages issues
- Retained by Berger & Montague, P.C.

In Re Namenda Direct Purchaser Antitrust Litigation

- United States District Court Southern District of New York
- Case No. 1:15-CV-07488
- Expert Report, September 15, 2017
- Amended Expert Report, September 20, 2017
- Expert Reply Report, October 25, 2017
- Amended Expert Reply Report November 9, 2017
- Testified at deposition, October 6, 2017
- Opinion concerning class certification and damages issues
- Retained by Berger & Montague, P.C.; and Garwin Gerstein & Fisher LLP

In Re Capacitors Antitrust Litigation

- United States District Court Northern District of California San Francisco Division
- Case No. 3:14-CV-03264 -JD
- Expert Declaration, February 24, 2017
- Expert Reply Declaration, April 28, 2017
- Testified at deposition, May 17, 2017
- Expert Trial Declaration, November 30, 2018
- Expert Trial Reply Declaration, April 19, 2019
- Testified at deposition, May 23, 2019
- Expert Declaration, July 2, 2021
- Opinion concerning class certification issues regarding indirect purchasers
- Retained by Cotchett, Pitre & McCarthy, LLP

2016 *Deere Construction, LLC, v. Cemex Construction Materials Florida, LLC, et al.*

- United States District Court Southern District of Florida
- Case No. 15-24375-CIV-ALTONAGA/O'Sullivan
- Expert Report, September 14, 2016
- Testified at deposition, September 27, 2016
- Opinion concerning class certification issues
- Retained by Kozyak Tropin & Throckmorton, LLP; Harke Clasby & Bushman, LLP; and McCallum, Methvin & Terrell, P.C.

Luke Begonja v. Wyndham Vacation Resorts, Inc., et al. (Case No. 2015-CA-010943)

Gerrit Brouwer, Jr., et al. v. Wyndham Vacation Resorts, Inc., et al. (Case No. 2014-CA-008533)

Gary Gottschalk, et al. v. Wyndham Vacation Resorts, Inc., et al. (Case No. 2015-CA-001957)

Susan Hatzipetro, et al. v. Wyndham Vacation Resorts, Inc., et al. (Case No. 2014-CA-007996)

Shelly Keegan, et al. v. Wyndham Vacation Resorts, Inc., et al. (Case No. 2015-CA-001953)

Yvonne Klebba, et al. v. Wyndham Vacation Resorts, Inc., et al. (Case No. 2014-CA-008535)

Adriane McConville, et al. v. Wyndham Vacation Resorts, Inc., et al. (Case No. 2015-CA-001960)

Ernest W. Yeager Jr., et al. v. Wyndham Vacation Resorts, Inc., et al. (Case No. 2014-CA-008054)

- In the Circuit Court of the Ninth Judicial Circuit in and for Orange County, Florida
- Expert Report, September 14, 2016
- Testified at deposition, October 27-28, 2016
- Testified at deposition, March 2-3, 2017
- Expert Report, May 19, 2017
- Testified at deposition, August 29, 2017
- Opinion concerning damages issues
- Retained by Badham & Buck, LLC

In Re: Evanston Northwestern Healthcare Corporation Antitrust Litigation

- United States District Court for the Northern District of Illinois Eastern Division
- No. 07-C-4446
- Expert Report, July 28, 2016
- Expert Reply Report, January 25, 2017
- Testified at deposition, September 20, 2016
- Testified at deposition, February 22, 2017

- Opinion concerning damages issues
- Retained by Miller Law LLC

In Re: Ductile Iron Pipe Fittings ("DIPF") Direct Purchaser Antitrust Litigation

- United States District Court for the District of New Jersey
- Civ. No. 12-711 (AET)(LHG)
- Declaration, May 27, 2016
- Reply Declaration, March 31, 2017
- Testified at deposition, July 8, 2016
- Opinion concerning class certification, merits, and damages issues
- Retained by Cohen Milstein Sellers & Toll PLLC; and Kaplan Fox & Kilsheimer LLP

Nestlé Purina Petcare Company v. Blue Buffalo Company, Ltd.

Blue Buffalo Company, Ltd. v. Nestlé Purina Petcare Company, et al.

Blue Buffalo Company, Ltd. v. Wilbur-Ellis Company, et al.

Diversified Ingredients, Inc. v. Wilbur-Ellis Company, et al.

Diversified Ingredients, Inc. v. Custom AG Commodities, LLC, et al.

- United States District Court for the Eastern District of Missouri Eastern Division
- Cause No.: 4:14-CV-00859 RWS
- Affidavit, March 17, 2016
- Opinion concerning pricing issues
- Retained by Lashly & Baer, P.C.

In Re: Cast Iron Soil Pipe and Fittings Antitrust Litigation

- United States District Court Eastern District of Tennessee at Chattanooga
- Case No.: 1:14-md-2508
- Declaration, March 4, 2016
- Testified at deposition, May 19, 2016
- Opinion concerning class certification and damages issues
- Retained by Cohen Milstein Sellers & Toll PLLC; Cera LLP; and Kaplan Fox & Kilsheimer LLP

Darren Ewert v. Denso Corporation, et al.

- Supreme Court of British Columbia
- Case No. S-135610
- Expert Report, February 12, 2016
- Expert Reply Report, January 5, 2017
- Opinion concerning class certification issues
- Retained by Camp Fiorante Matthews Mogerman

Serge Asselin v. Hitachi, LTD & al.

- Cour Supérieure Distict de Québec

- Case No. 200-06-000180-144
- Expert Report, February 11, 2016
- Opinion concerning class certification issues
- Retained by Siskinds LLP

2015 *Thomas Mervyn v. Atlas Van Lines, Inc., et al.*

- United States District Court Northern District of Illinois Eastern Division
- Case No. 1:13-CV-03587
- Expert Declaration, September 3, 2015
- Expert Report, February 4, 2016
- Opinion concerning data issues
- Opinion concerning damages issues
- Retained by Miller Law LLC

Thomas Mervyn v. Nelson Westerberg, Inc.

- United States District Court Northern District of Illinois Eastern Division
- Case No. 1:11-CV-06594
- Expert Report, July 27, 2015
- Opinion concerning damages issues
- Retained by Miller Law LLC

Lane's Gifts and Collectibles, LLC v. Microsoft Online, Inc.

- United States District Court Western District of Washington at Seattle
- No. 2:12-cv-01181-BJR
- Expert Report, March 23, 2015
- Testified at deposition, May 21, 2015
- Opinion concerning damages issues
- Retained by Nix, Patterson & Roach, L.L.P.; and Kessler Topaz Meltzer & Check, LLP

BlueCross BlueShield of Tennessee, Inc., et al. v. King Pharmaceuticals, Inc., et al.

- In the Circuit Court for Cocke County, Tennessee
- Civil Action No. 32941-II
- Expert Report, January 23, 2015
- Opinion concerning impact and damages issues
- Retained by Miller Law LLC

In Re: Domestic Drywall Antitrust Litigation

- United States District Court for the Eastern District of Pennsylvania
- MDL No. 2437 13-MD-2437
- Trial Expert Report, January 23, 2015
- Reply Expert Report, April 23, 2015
- Expert Report concerning class certification, August 3, 2016
- Expert Reply Report concerning class certification, January 9, 2017
- Affidavit, July 11, 2019

- Testified at deposition, February 25, 2015
- Testified at deposition, August 30, 2016
- Testified at deposition, February 17, 2017
- Testified at class certification hearing, April 27, 2017
- Expert Supplemental Report, July 31, 2017
- Opinion concerning merits issues regarding direct purchasers
- Opinion concerning class certification issues, impact and damages regarding direct purchasers
- Retained by Cohen Milstein Sellers & Toll PLLC; Berger & Montague, P.C.; and Spector Roseman Kodroff & Willis, P.C.

In Re: Processed Egg Products Antitrust Litigation

- United States District Court for the Eastern District of Pennsylvania
- MDL No. 2002
- Expert Declaration, January 22, 2015
- Expert Reply Declaration, April 3, 2015
- Testified at deposition, May 7, 2015
- Opinion concerning merits and damages issues regarding indirect purchasers
- Retained by Straus & Boies, LLP

2014 *In Re: Class 8 Transmission Indirect Purchaser Antitrust Litigation*

- United States District Court for the District of Delaware
- Civil Action No. 11-cv-00009 (SLR)
- Declaration, November 3, 2014
- Reply Declaration, March 6, 2015
- Trial Declaration, March 27, 2015
- Trial Reply Declaration, July 2, 2015
- Testified at deposition, December 17, 2014
- Testified at deposition, March 16, 2015
- Testified at class certification hearing, March 25, 2015
- Testified at deposition, May 1, 2015
- Opinion concerning class certification issues regarding indirect purchasers
- Opinion concerning merits and damages issues regarding indirect purchasers
- Retained by Glancy Binkow & Goldberg LLP

Mark S. Wallach, et al., v. Eaton Corporation, et al.

- United States District Court District of Delaware
- Civil Action No. 10-260-SLR
- Expert Report, November 3, 2014
- Expert Reply Report, March 6, 2015
- Trial Expert Report, March 27, 2015
- Trial Expert Reply Report, July 2, 2015
- Testified at deposition, December 16, 2014
- Testified at deposition, March 16, 2015

- Testified at class certification hearing, March 25, 2015
- Testified at deposition, May 1, 2015
- Opinion concerning class certification issues regarding direct purchasers
- Opinion concerning merits and damages issues regarding direct purchasers
- Retained by Cohen Milstein Sellers & Toll PLLC

Sheridan Chevrolet Cadillac Ltd., et al., v. Furukawa Electric Co. Ltd., et al.

Sheridan Chevrolet Cadillac Ltd., et al., v. Mitsubishi Electric Corporation, et al.

- Ontario Superior Court of Justice
- Court File Nos. CV-12-446737-00CP / CV-14-496994-00CP
- Expert Report, April 15, 2016
- Expert Report, October 14, 2014
- Opinion concerning class certification issues
- Retained by Siskinds LLP

Resco Products, Inc., v. Bosai Minerals Group Co., Ltd., et al.

- United States District Court for the Western District of Pennsylvania
- Civil Action No.: 2:06-cv-235-JFC
- Expert Report, September 24, 2008
- Expert Report, September 29, 2014
- Supplemental Expert Report, December 15, 2014
- Testified at deposition, February 13, 2015
- Opinion concerning damages
- Retained by Boies, Schiller & Flexner LLP

Fond Du Lac Bumper Exchange Inc., et al. v. Jui Li Enterprise Company Ltd. et al.

- United States District Court Eastern District of Wisconsin
- Case No.: 2:09-cv-00852-LA
- Affidavit, August 1, 2014
- Affidavit, November 4, 2014
- Declaration, April 24, 2015
- Expert Report, July 15, 2015
- Expert Reply Report, November 24, 2015
- Expert Surreply Report, January 15, 2016
- Expert Trial Report, August 18, 2016
- Expert Trial Reply Report, December 20, 2016
- Testified at deposition, October 1, 2015
- Testified at deposition, February 13, 2017
- Opinion concerning class certification and damages issues
- Opinion concerning Defendants' replacement data
- Opinion concerning Defendant and LKQ transaction-level data
- Opinion concerning merits and damages issues
- Retained by Stueve Siegel Hanson, LLP

Meredith Corporation, et al., v. SESAC, LLC, et al.

- United States District Court for the Southern District of New York
- 09 Civ. 9177 (PAE)
- Expert Report, July 10, 2014
- Opinion concerning class certification issues
- Retained by Weil, Gotshal & Manges LLP

Janet Skold, et al., v. Intel Corporation, et al.

- Superior Court of the State of California for the County of Santa Clara
- Case No. 1-05-CV-039231
- Expert Report, June 14, 2007
- Testified at deposition, August 31, 2007
- Testified at deposition, January 10, 2014
- Opinion concerning class certification issues
- Opinion concerning damages issues
- Retained by Girard Gibbs LLP

In Re: Polyurethane Foam Antitrust Litigation

- United States District Court Northern District of Ohio Western Division 8
- MDL No. 2196
- Declaration, June 11, 2013
- Reply Declaration, October 23, 2013
- Trial Declaration, March 18, 2014
- Reply Trial Declaration, June 30, 2014
- Testified at deposition, August 20, 2013
- Testified at deposition, November 20, 2013
- Testified at class certification hearing, January 15, 2014
- Testified at deposition, April 14, 2014
- Testified at deposition, July 14, 2014
- Opinion concerning class certification issues regarding indirect purchasers
- Opinion concerning merits and damages issues
- Retained by Miller Law LLC

Professional Experience

Economic Consulting Positions

Monument Economics Group, Oct. 11, 2016 - Present

Nathan Associates, Inc., Arlington, VA, *Senior Vice President*, Jan. 2013 – Sep. 20, 2016

Advanced Analytical Consulting Group, Inc., Washington, DC, *Principal*, Mar. 2011– Jan. 2013

Econ One Research, Inc., Washington, DC, *Managing Director and DC Office Head*, Jul. 2006 – Mar. 2011

- Opened and staffed the DC office; managed office affairs on a daily basis
- Retained as an expert witness for damages and class certification issues in antitrust, breach of contract, product liability and RICO cases; representative testimony includes determination of liability and damages in a case involving resale price maintenance in consumer products, class certification in a horizontal price-fixing case involving international travel in the airline industry, class certification in a consumer class action involving RICO claims in state court
- Industry pre-litigation analyses for consumer products, chemicals, and other industries

Navigant Consulting, Inc., Washington, DC, *Associate Director*, Feb. 2006 – Jul. 2006

- Case manager for damages analysis in asbestos litigation and personal injury claims

Nathan Associates, Inc., Arlington, VA, *Managing Economist*, Jul. 2004 – Feb. 2006

- Case manager for economic analysis of class certification and damages issues in antitrust and RICO cases involving the chemical, consumer products, and tobacco industries
- Retained as expert on damages for direct purchasers of NBR in the Crompton Global Settlement; submitted an Affidavit on damages and appeared before the Special Master for the Crompton Global Settlement (the Hon. Kenneth Feinberg)

Board Membership

- Board of Advisors, American Antitrust Institute, Washington, DC
- Department of Economics Advisory Council, University of Tennessee, Knoxville, Chairman, Spring 2006 – April 2011

Teaching Positions

- The University of Tennessee, Knoxville, *Adjunct Professor*, Spring 2019 – present
- The George Washington University, Washington, DC, *Adjunct Assistant Professor of Economics*, Fall 2004 – present
- North Carolina State University (NCSU), *Assistant Professor* (Department of Agricultural and Resource Economics), Fall 1999 – Spring 2004
- The University of Pennsylvania, *Adjunct Instructor*, Summer 1990 – Spring 1994

Additional Teaching Experience

- The Wharton School Evening Division, Philadelphia, PA, summer 1993
- Rutgers University, Camden, NJ, summer 1993
- Philadelphia College of Textiles and Science, Philadelphia, PA, fall 1992
- The Pennsylvania State University, Media, PA, 1991
- St. Mary's College of Maryland, St. Mary's City, MD, summer 1989

- The University of Maryland University College, College Park, MD, 1988-1989

Courses Taught

- Managerial Economics for MBA students (George Washington University)
- Law and Economics (George Washington University)
- Intermediate Microeconomics – graduate level (George Washington University)
- Latin American Economic Development (George Washington University)
- International Trade: Theory and Policy (George Washington University)
- International Finance: Theory and Policy (George Washington University)
- Agricultural Production and Supply – Ph.D. field course (North Carolina State University)
- U.S. Agricultural Policy (North Carolina State University)
- Microfinance: Theory, Practice and Regulation (Superintendencia de Banca y Seguros)
- Statistical Analysis for Economics (University of Pennsylvania)
- Principles of Microeconomics (University of Maryland, St. Mary's College of Maryland)
- Principles of Macroeconomics (University of Pennsylvania, The Wharton School, Penn State University)
- Fundamentals of Micro/Macro Economics (University of Maryland)
- Environmental and Natural Resource Economics (Rutgers)

Federal Reserve Experience

Federal Reserve Bank of Kansas City, *Senior Economist* Jan. 1998 – Aug. 1999; *Economist*, Jan. – Dec. 1997

- Analysis of regional, macroeconomic developments in agriculture, and energy
- Research on public policy towards agriculture in the U.S., especially the impact of farm policy reform
- Briefings to the Bank president and outside groups on the regional economy, agriculture, agricultural trade

Board of Governors of the Federal Reserve System, *Economist*, Jun. 1994 – Dec. 1996

- Analysis of macroeconomic conditions, commodity markets, and prices (CPI, PPI, Core prices)
- Forecasting of agricultural output, prices, and income
- Briefings to the Board of Governors on agriculture and food-price developments

Other Consulting Experience

World Perspectives, Inc., 2003 - 2004

- Analysis of trade barriers for U.S. exports of feed ingredients, pet food ingredients, and food ingredients
- Analysis of the impact of a Free Trade Area of the Americas on U. S. soybean producers
- Analysis of the potential for U.S. Halal-certified meat exports to the Middle East

Womble Carlyle Sandridge & Rice, LLP, 2003 - 2004

- Provided expert testimony related to the estimation of business profitability Smith-Moore, 2002 - 2003
- Provided economic analysis of the U.S. Tobacco Program

Superintendencia de Banca y Seguros (Lima, Peru), 1998 - 2000

- Developed and taught a class on Microfinance issues (in English) to students enrolled in a training program for bank examiners; the program was sponsored by the Inter-American Development Bank.

World Bank, Africa Technical Department, 1992 – 1993

- Summarized and provided an overview of data available on African economic and social indicators

ACG-Afrique, January 1993

- Provided critical review of a study document outlining the impact of structural adjustment on African agriculture

Professional Organizations

- National Association for Business Economics
- American Economic Association

Papers, Publications, and Speeches

Papers Published in Refereed Journals

- "Losing the Forest for the Trees: On the Loss of Economic Efficiency and Equity in Federal Price-Fixing Class Actions," (with Martin A. Asher and Gregory K. Arenson) *Virginia Law & Business Review*, Vol. 16, No. 2, Spring 2022, 293-325
- "Government Regulation and Quality in the U.S. Beef Market," (with Peyton Ferrier) *Food Policy*, Vol. 32, No. 1, February 2007, 84-97
- "Rent-seeking in U.S.-Mexican Avocado Trade," *Cato Journal*, Vol. 26, No. 1, December 2006, 159-177

- "Consolidation in U.S. Agriculture and the Role of Public Policy," *The ICAI Journal of Agricultural Economics*, Vol. 1, 2004, 7-16
- "Fertilizer Use, Risk, and Off-farm Labor Markets in the Semi-Arid Tropics of India," *American Journal of Agricultural Economics*, Vol. 85, No. 2, May 2003, 359-371
- "Inverse Productivity: Land Quality, Labor Markets, and Measurement Error," *Journal of Development Economics*, Vol. 71, No. 1, June 2003, 71-95
- "A Market-Forces Policy for the New Farm Economy?" *Review of Agricultural Economics*, Vol. 24, No. 1, 1 March 2002, 15-30
- "Food Crops, Exports, and the Short-run Policy Response of Agriculture in Africa," *Agricultural Economics*, Vol. 22, No. 3, April 2000, 271-298
- "FAIR Act Implications for Land Values in the Corn Belt," (with Jason Henderson) *Review of Agricultural Economics*, Vol. 22, No. 1, Summer – Spring 2000, 102-119
- "Why are Estimates of Agricultural Supply Response So Variable?" (with Francis X. Diebold) *Journal of Econometrics*, Vol. 76, No. 1-2, January – February 1997, 367-373

Non-refereed Publications, Articles, and Editorials

- "The Predominance Requirement for Antitrust Class Actions – Can Relevant Market Analysis Help?" (with Jeffrey Leitzinger) *American Bar Association – Section of Antitrust Law, Economics Committee Newsletter*, Vol. 7, No. 1, Spring 2007, 17-22
- "Reform of U.S. Farm Policy in an Integrating World Economy," *Developing Countries in the WTO System*, 2006
- "New Farm Economy," *Regulation*, Winter 2003-2004, Cato Institute for Public Policy Research, 2003
- "What Road Will U.S. Economy Take in 2003?" *Southeast Farm Press*, 5 February 2003
- "Fast Track for the Tax Cuts," guest editorial, *News and Observer*, 18 January 2003
- "The 2002 Farm Bill," (with Blake Brown and Michele Marra) *NC State Economist*, November – December 2002
- "Economy-minded Tax Cuts: Bush's Reductions Provided the Boost to Lift U.S. From Recession," guest editorial, *News and Observer*, 2 July 2002
- "Policy Only Effective if Farm Economy is Recognized," special report to *Feedstuffs*, 5 June 2000
- "Aid During Crisis of Little Long-term Help to Farmers," guest editorial, *Kansas City Star*, 23 August 1999
- "Survey of Agricultural Credit Conditions," *Federal Reserve Bank of Kansas City, Regional Economic Digest*, various issues, 1997-1999
- "U.S. Agriculture at the Crossroads in 1999," *Economic Review*, Federal Reserve Bank of Kansas City, Vol. 84, No. 1, 1999, 73-91

- "Can U.S. Oil Production Survive the 20th Century?" *Economic Review*, Federal Reserve Bank of Kansas City, Vol. 84, Quarter I, 1999
- "Will the Tenth District Catch the Asian Flu?" (with Ricardo Gazel) *Economic Review*, Federal Reserve Bank of Kansas City, Vol. 83, Quarter II, 1998, 9-26
- "From the Plains to the Plate: Can the Beef Industry Regain Market Share?" (with Michelle Beshear) *Economic Review*, Federal Reserve Bank of Kansas City, Vol. 83, Quarter IV, 1998, 49-66
- "U.S. Agriculture: Another Solid Year in 1998?" (with Mark Drabenstott) *Economic Review*, Federal Reserve Bank of Kansas City, Vol. 83, No. 1, Quarter I, 1998, 55-74
- "How Will the 1996 Farm Bill Affect the Outlook for District Farmland Values?" *Economic Review*, Federal Reserve Bank of Kansas City, Vol. 82, Quarter IV, 1997, 85-101
- "Food Prices and the Farm Sector," monthly *Greenbook*, Federal Reserve Board of Governors, various issues 1994-1996
- "Hedge to Arrive Contracts," Memo to the Board of Governors, Federal Reserve Board of Governors, 5 June 1996
- "Prices in the May Greenbook," Federal Reserve Board of Governors, 19 May 1996
- "Prices in the March Greenbook," Federal Reserve Board of Governors, 24 March 1996
- "Commodity Price Developments," Weekly memo to the Board of Governors, Federal Reserve Board of Governors, August 1994 – December 1996

Conference Presentations

- "Class Action Developments," panelist at the American Antitrust Institute's 6th Annual Private Antitrust Enforcement Conference, Washington, DC: 4 December 2012
- "Consequences for Antitrust Thought and Practice," presented at the American Antitrust Institute Invitational Symposium: Antitrust Challenge of Multi-Channel Distribution in the Internet Age, Washington, DC: 22 June 2011
- "The U.S. Economy in the Year Ahead," presented at the Long Company Annual Conference, Chicago, IL: 11 September 2009 and 19 September 2008
- "The U.S. Economic Outlook," presented at the Industry Outlook Conference, Chicago, IL: 17 October 2006 and 18 October 2005
- "How Will the Economy Impact Your Business?" presented at the Long Company Annual Conference, Las Vegas, NV: 14 August 2004
- "Focus on The Economy" presented at *Milling and Baking News* Annual Purchasing Managers' Conference, Kansas City, MO: 14 June 2004, 10 June 2003 and 11 June 2002

- "The U.S. Economic Outlook and Agriculture," presented at the Industry Outlook Conference, Chicago, IL: October 2003
- "The U.S. Economic Outlook and Agriculture," presented at the Industry Outlook Conference, Breckenridge, CO: 7 April 2002
- "The U.S. Economic Outlook: The Cost of Terror," presented at the Southern Agricultural Outlook Conference, Atlanta, GA: 24 September 2001
- "The Economy in Focus," presented at *Milling and Baking News* annual purchasing managers' conference, Kansas City, MO: 5 June 2001
- "The Great American Growth Machine," presented at the Southern Agricultural Outlook Conference, Atlanta, GA: 27 September 2000
- "The Economy in Focus," presented at *Milling and Baking News* annual purchasing managers' conference, Kansas City, MO: 6 June 2000
- "The Outlook for the U.S. Pork Sector," presented to the Industry Outlook Conference, Las Vegas, NV: 17 April 2000
- "The National Economic Outlook: The Road Ahead," presented to the Food Industry Outlook Conference, Breckenridge, CO: 11 April 1999
- "Farm Policy for the New Millennium," presented to Federal Reserve Bank of Kansas City, Division of Bank Supervision and Regulation, Bank Examiners' Annual Training Conference, 7 January 1999
- "The Impact of the 1996 Farm Bill on Farmland Values," (with Jason Henderson) first place poster presentation at the annual meetings of the American Agricultural Economics Association, Salt Lake City, UT: 4 August 1998
- "A Note on the Inverse Productivity Relationship," presented at the annual meetings of the Western Economic Association International, Seattle, WA: July 1997
- "Off-farm Labor Supply and Fertilizer Use in the Semi-Arid Tropics of India," presented at the annual meetings of the American Agricultural Economics Association, August 1995
- "Prices for Food-Away-From-Home and Core Inflation: Some Empirical Relationships," (with James E. Kennedy) presented at the Federal Reserve System Committee on Agriculture, Richmond, VA: October 1995
- "Some Simple Dynamics of Farming," presented at the annual meetings of the American Agricultural Economics Association, Orlando, FL: August 1993
- "Structural Adjustment and Food Security," (with W. Graeme Donovan), presented at the annual meetings of the American Agricultural Economics Association, Orlando, FL: August 1993
- "Structural Adjustment and African Agricultural Supply Response to Exchange Rate and Price Movements," (with W. Graeme Donovan), presented at the annual meetings of the Southern Agricultural Economics Association, Tulsa, OK: January 1993

Other Presentations

- Panelist, "Injured V. Non-Injured In Class Actions," American Bar Association, 18 October 2022
- Panelist, "If I Am Uninjured, Do I Not Bleed? The Packaged Seafood Decision," American Bar Association Webinar, 22 June 2022
- Panelist, "Antitrust Class Actions – Where Are We? A 360 Degree Perspective," NYSBA Annual Antitrust Law Section Meeting, 30 January 2014
- Panelist, Retrospective on the Baby Products Litigation, ABA Section of Antitrust Law: Pricing Conduct Committee, 31 July 2013
- Panelist, Economic Forecasting Summit, Northern Indiana Workforce Investment Board, Inc., 29 March 2007
- "The Welfare Benefits of USDA Beef Quality Certification Programs" (with Peyton Ferrier), presentation memo, 2007
- "Reform of U.S. Farm Policy in an Integrating World Economy," presented to the Cordell Hull Institute, Trade Policy Roundtable on Reform of U.S. Farm Policy and the WTO System, Washington, DC: 31 March 2006
- "The Case for a Market-forces Farm Policy in the U.S." presented at the Cordell Hull Institute Trade Policy Roundtable, Washington DC: 26 May 2005
- "How Will the Economy Impact Your Business?" presented at the Apple Processors Association annual meeting, Homewood Resort, 20 June 2004
- "The U.S. and International Economic Outlook," presented at the AgFirst Loan Officer's Seminar, Atlanta, GA: 30-31 October 2002
- "Will the U.S. Economy Bounce or Crawl?" presented to the Eastern Bankruptcy Institute, North Myrtle Beach, SC: 1 June 2002
- "The U.S. Economic Outlook and Agriculture," presented to the National Pork Producers Pork Action Group, Washington, DC: 10 April 2002
- "The U.S. Economic Outlook" presented to the Risk Management Associates, Raleigh, NC: 7 February 2002
- "The U.S. Economic Outlook: The Cost of Terror," presented at the National Pork Producers Pork Action Group, Marco Island, FL: 14 November 2001
- "Consolidation in Agriculture and the Role of Public Policy," paper presented to the Southern Extension Meetings, Williamsburg, VA: 13 June 2000
- "The New Farm Economy," presented at the annual meetings of the National Association of County Agricultural Agents, Omaha, NE: 14 September 1999
- "Regional Economic Update," presented to bankers in Kansas, Nebraska, Missouri, and Oklahoma as part of the Regulatory Update Seminar, Federal Reserve Bank of Kansas City, April 1999

- “The National Economic Outlook,” presented to Oklahoma State University Advanced Cattle Management Seminar, Stillwater, OK: 11 March 1999
- “Regional Economic Update,” presented to Thomas Hoenig, President, Federal Reserve Bank of Kansas City, 13 November 1998
- “Can the Tenth District Survive the Asian Flu?” The Federal Reserve Bank of Kansas City Economic Forums, nine presentations to bankers in Wyoming, Oklahoma, and New Mexico, 21 September – 21 October 1998
- “The Impact of Asian Economic Developments on Tenth District Agriculture,” presented to Thomas Hoenig, President, Federal Reserve Bank of Kansas City, 30 January 1998
- “The Outlook for the Nebraska Economy,” The Federal Reserve Bank of Kansas City: Nebraska Economic Forums, six presentations to bankers in Nebraska, 6-15 October 1997
- “Update on the Macroeconomy and Special Briefing on Forecast Performance at the Kansas City Fed,” presented to Thomas Hoenig, President, Federal Reserve Bank of Kansas City, 13 August 1997
- “Regional Economic Update,” presented to Thomas Hoenig, President, Federal Reserve Bank of Kansas City, 14 May 1997 and 21 March 1997
- “Producer Prices, Retail Sales, and Agricultural Commodity Markets,” presented to the Board of Governors of the Federal Reserve System, 15 July 1996

Referee Experience

Referee for the Following Academic Journals

- World Development, 1993
- Journal of Development Economics, 1994, 1995
- International Economic Review, 1995
- Journal of Human Resources, 1997
- Journal of Business and Economics Statistics, 1997
- American Journal of Agricultural Economics, 1999, 2001, 2002
- Agricultural Economics, 2000, 2001, 2004
- Agricultural Finance Review, 2000, 2004
- Review of Agricultural Economics, 2000, 2002, 2004
- Journal of Agricultural and Resource Economics, 2000, 2001, 2002
- Emerging Markets Review, 2001
- Contemporary Economic Policy, 2004

Fellowships, Honors, and Awards

Fellowships

- Departmental Fellowship, University of Pennsylvania, 1989-1990
- Dean's Fellowship, University of Pennsylvania, 1991-1992
- Graduate School Fellowship, University of Maryland, College Park, 1987-1989

Honor Societies and Professional Organizations

- Phi Eta Sigma National Honor Society
- Mortar Board National Honor Society
- Golden Key National Honor Society
- Vice President for Professional Activities, Delta Sigma Pi

Awards

- Top Graduate in Liberal Arts, University of Tennessee, Knoxville, Spring 1987
- Chancellor's Citation for Extraordinary Professional Promise, University of Tennessee, Knoxville
- Chancellor's Citation for Outstanding Academic Achievement, University of Tennessee, Knoxville
- First place poster presentation, American Agricultural Economics Association annual meetings, August 1998 (with Jason Henderson)
- Honorable mention, American Agricultural Economics Association, Essay for the 21st Century, 2001, "A Market Forces Policy for the New Farm Economy"
- Honorable mention, American Antitrust Institute Antitrust Enforcement Awards, Outstanding Antitrust Litigation Achievement in Economics (for work in *In Re Titanium Dioxide Antitrust Litigation*)
- American Antitrust Institute Antitrust Enforcement Awards, Outstanding Antitrust Litigation Achievement in Economics (for work in *In Re Domestic Drywall Antitrust Litigation*)
- American Antitrust Institute Antitrust Enforcement Awards, Outstanding Antitrust Litigation Achievement in Economics (for work in *In Re Namenda Direct Purchaser Antitrust Litigation*)

External Funding

- "Unmanufactured Flue-Cured Tobacco Exports and the Export Component of the Quota Formula." \$13,890 NC Tobacco Foundation. With Blake Brown 2000 – 2001.

Professional Activities and Services

Graduate Student Advising

M.A. degree, North Carolina State University

- Joe Weinberg (Political Science)

Master of Economics, North Carolina State University

- William Pole (2000)
- Dwight Wilder (Chairman, 2002)
- Adrian Atkeson (2002)
- Sarah Spivey
- Li Zhang (Chairman, 2003)
- Nia Atmadja (2003)

Doctor of Philosophy, North Carolina State University

- William Deese (2003)
- Peyton Ferrier (Chairman, 2004)
- Yang Wang (2003)
- Bobby Huggett (2003)
- Syed Wadood (Chairman, 2004)
- Henry Kuo

Economic and Statistical Modeling Skills

- Experience with all major statistical software including SAS, STATA, LIMDEP and C++; applied econometric modeling skills in damage analysis of consumer industries, chemicals industries, and agricultural markets, correlation analysis for class certification.

Appendix B

Materials Relied Upon

Pleadings and Legal Correspondence

U.S. Supreme Court, *Jefferson Parish Hospital District No. 2 et al. v. Hyde*, 466 U.S., No. 82-1031, March 27, 1984.

United States District Court for the Northern District of Florida, *Restore Robotics LLC and Restore Robotics Repair LLC v. Intuitive Surgical, Inc.*, No, 5:19-cv-00055-MCR-MJF, First Amended Complaint, May 13, 2019.

United States District Court Northern District of California, *Surgical Instrument Service Company, Inc., Plaintiff, v. Intuitive Surgical, Inc.*, Defendant, Case No.: 5:21-cv-03496, Complaint, May 10, 2021.

Deposition Transcripts and Exhibits

30(b)(6) Deposition of Bob DeSantis, May 27, 2021.

30(b)(6) Deposition of Glen Papit, June 2, 2021.

30(b)(6) Deposition of Greg Posdal, November 1, 2022.

30(b)(6) Deposition of Keith Robert Johnson, October 27, 2022.

30(b)(6) Deposition of Marshall Mohr, November 7, 2022.

Individual & 30(b)(6) Deposition of Nicky Goodson, October 27, 2022.

Deposition of Anthony McGrogan, June 7, 2021.

Deposition of Antonio (AJ) Inacay, June 8, 2021.

Deposition of Bob Overmars, June 15, 2021.

Deposition of Chris Gibson, June 22, 2021.

Deposition of Dan Jones, November 10, 2022.

Deposition of David Mixner, June 10, 2021.

Deposition of Edward W. Harrich, May 24, 2021.

Deposition of Glenn Vavoso, May 14, 2021.

Deposition of Grant Duque, November 8, 2022.

Deposition of Greg Posdal, May 10, 2021.

Deposition of Katie Scoville, May 26, 2021.

Deposition of Myriam Curet, MD, May 7, 2021.

Deposition of Ronald Lee Bair, Jr., May 24, 2021.

Deposition of Stacey Donovan, May 27, 2021.

Deposition of Tyler McDonald, May 7, 2021.

Bates-Stamped Materials

Documents

Intuitive-00001237	Intuitive-00110473	Intuitive-00366044
Intuitive-00011487	Intuitive-00113020	Intuitive-00372699
Intuitive-00014395	Intuitive-00121229	Intuitive-00552993
Intuitive-00029346	Intuitive-00124485	Intuitive-00594883
Intuitive-00049108	Intuitive-00133628	Intuitive-00595405
Intuitive-00073538	Intuitive-00139149	Intuitive-00595673
Intuitive-00091257	Intuitive-00141567	Intuitive-00601672
Intuitive-00102938	Intuitive-00173706	Intuitive-00602576
Intuitive-00103456	Intuitive-00194074	Intuitive-00604054
Intuitive-00106127	Intuitive-00234762	Intuitive-00604123
Intuitive-00110252	Intuitive-00292544	Intuitive-00604127
Intuitive-00110451	Intuitive-00364420	Intuitive-00686068

Third-Party Materials

Academic Literature

A.P. Lerner, "The Concept of Monopoly and the Measurement of Monopoly Power," *The Review of Economic Studies*, Vol. 1, No.3, 1934, 157-175.

Abhishek Trehan and Tristan J. Dunn, "The robotic surgery monopoly is a poor deal," *The BMJ*, Vol. 347, December 19, 2013, 1-2.

Andrew Brodie and Nikhil Vasdev, "The future of robotic surgery: How robotics could help shape the future of surgical care," *Annals of the Royal College of Surgeons of England*, September 4, 2018.

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- Nicholas Economides, "Tying, bundling, and loyalty/requirement rebates," *Research Handbook on the Economics of Antitrust Law*, Einer Elhauge (Ed.), Edward Elgar, 2012, 121-143.
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- Rafael E. Perez and Steven D. Schwaitzberg, "Robotic surgery: finding a value in 2019 and beyond," *Annals of Laparoscopic and Endoscopic Surgery*, Vol. 4., May 30, 2019.
- Richard A. Posner, *Antitrust Law*. Second Edition, Chicago, IL: The University of Chicago Press, 2001.
- Robert S. Pindyck and Daniel L. Rubinfeld, *Microeconomics*, Eighth Edition, Upper Saddle River, New Jersey: Pearson Education, 2013.
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- Tim Lane, "A short history of robotic surgery," *Annals of the Royal College of Surgeons of England*, 2018.

William E. Kelley, “The Evolution of Laparoscopy and the Revolution in Surgery in the Decade of the 1990s,” *Journal of The Society of Laparoscopic & Robotic Surgery*, 2008, 351-357.

Zheng Wang, Sicong Liu, Jing Peng, and Michael Zhiqiang Chen, “The Next-Generation Surgical Robots,” *Intech Open*, 2017, 3-21.

SEC Filings

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Intuitive Surgical, Inc., SEC Form 10-K, filed March 16, 2005.

Intuitive Surgical, Inc., SEC Form 10-K, filed March 15, 2006.

Intuitive Surgical, Inc., SEC Form 10-K, filed January 29, 2010.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 1, 2011.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 6, 2012.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 4, 2013.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 3, 2014.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 2, 2016.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 6, 2017.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 2, 2018.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 7, 2020.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 10, 2021.

Intuitive Surgical, Inc., SEC Form 10-K, filed February 3, 2022.

Intuitive Surgical, Inc., SEC Form 10-Q, filed October 21, 2022.

TransEnterix Inc., SEC Form 10-K, filed on March 18, 2018.

TransEnterix Inc., SEC Form 10-K, filed on February 27, 2019.

Correspondence

Telephone conversation with Mr. Philip J. Phillips, dated December 1, 2022.

Press Release

“TransEnterix Announces Name Change to Asensus Surgical and Introduces a New Category of Surgery, Performance-Guided Surgery,” *Business Wire*, February 23, 2021. Available at: <https://www.businesswire.com/news/home/20210223005444/en/TransEnterix-Announces->

Name-Change-to-Asensus-Surgical-and-Introduces-a-New-Category-of-Surgery-
Performance-Guided-Surgery.

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FDA, Letter to Iconocore Health, "RE: K210478," dated November 15, 2022. Available at https://www.accessdata.fda.gov/cdrh_docs/pdf21/K210478.pdf.

U.S. Department of Justice and the Federal Trade Commission, "Horizontal Merger Guidelines," August 19, 2010.

United States Department of Justice, Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act, 2008.

Industry Research and Company Materials

Candi Helseth, "Technology Widens Care Options for Rural Hospitals," *The Rural Monitor*, February 12, 2014.

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Enlightened Capital, "Intuitive Surgical (SRG) Investment Analysis," December 10, 2020. Available at: https://enlightenedcapital.substack.com/p/intuitive-surgical-isrg-investment?utm_source=profile&utm_medium=reader2.

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Intuitive Surgical, "EndoWrist/Single-Site Instrument & Accessory Catalog," May 2014. Available at: https://www.intuitivesurgical.com/products/871145_Instrument_Accessory_%20Catalog.pdf.

Intuitive Surgical, "Intuitive for Patients." Available at: <https://www.intuitive.com/en-us/patients/patients>.

Intuitive Surgical, "Move Surgery Forward. Again. da Vinci SP." Available at: <https://www.intuitive.com/en-us/products-and-services/da-vinci/systems/sp>.

Intuitive, "Patent Notice." Available at: <https://www.intuitive.com/en-us/about-us/company/legal/patent-notice>.

Isaac Ro, Veronika Dubajova, CFA, Akinori Ueda, Ph. D., Ziyi Chen, Jack O'Connell, Sara Silverman, and Frits Jonker, "Digital Health: Robotic Surgery and the OR of the Future," *Goldman Sachs: Equity Research*, November 15, 2018, 1-16.

Jack Curran, "Medical Equipment Repair & Maintenance Services," *IBISWorld*, June 2020.

Jason McGorman, "Intuitive Surgical Research," *Bloomberg Intelligence*, April 2019.

Marcel Oomen, "Record High Growth in Surgical Procedures Triggers Upgrade of Guidance," *Financiële Diensten Amsterdam*, October 18, 2019, 1-4.

Marion Webb, "Market Intel: Medtech Giants Read to Battle Frontrunner Intuitive Surgical in 'Soft Surgery Robotics,'" *Pharma Intelligence*, April 2020.

The Business Research Company, "Robotic Surgery Devices Global Market Report 2022 – By Product And Service (Robotic Systems, Instruments & Accessories, Services), By Surgery Type (Urological Surgery, Gynecological Surgery, Orthopedic Surgery, Neurosurgery, Other Surgery Types), By End User (Hospitals, Ambulatory Surgery Centers) – Market Size, Trends, And Global Forecast 2022-2026," October 2022. Available at: <https://www.thebusinessresearchcompany.com/report/robotic-surgery-devices-global-market-report>.

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Conor Hale, "Medtronic's Hugo surgical robot collects green lights in Europe, Canada, Japan," *Fierce Biotech*, October 19, 2022. Available at: <https://www.fiercebiotech.com/medtech/medtronics-hugo-surgical-robot-collects-green-lights-europe-canada-japan>.

Elizabeth Cairns, "Intuitive faces down the competition," *Evaluate Vantage*, February 22, 2022. Available at: <https://www.evaluate.com/vantage/articles/interviews/intuitive-faces-down-competition>.

Jaimy Lee, "Surgical-Robot Costs Put Small Hospitals in a Bind," *Modern Healthcare*, April 19, 2014. Available at: <https://www.modernhealthcare.com/article/20140419/MAGAZINE/304199985/surgical-robot-costs-put-small-hospitals-in-a-bind>.

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Dr. Ivan De Backer, "Dissecting the Robotic Surgery Market," *IDTechEx*, March 30, 2020. Available at: <https://www.idtechex.com/en/research-article/dissecting-the-robotic-surgery-market/20232>.

Eve Cunningham, MD, MBA, "Op-Ed: Addressing Our Da Vinci Addiction – A call to action for everyone in healthcare," *MedPage Today*, October 17, 2020. Available at: <https://www.medpagetoday.com/surgery/generalsurgery/89175>.

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EXHIBIT 4

to

**PAUL D. BRACHMAN DECLARATION IN SUPPORT OF
DEFENDANT'S MOTION IN LIMINE NO. 2
TO EXCLUDE DEUTSCHE BANK ANALYST REPORTS
AND RELATED TESTIMONY**

ATTACHMENT 45

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

SURGICAL INSTRUMENT SERVICE
COMPANY, INC.,

Plaintiff,

v.

INTUITIVE SURGICAL, INC.,

Defendant.

Case No.: 3:21-cv-03496-VC

Expert Report of Richard F. Bero, CPA, CVA
December 2, 2022

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

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HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

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I. Introduction**A. Assignment**

I have been asked to provide expert opinions on damages on behalf of Surgical Instrument Service Company, Inc. (“SIS”) in *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.*, Case No. 3:21-cv-03496-VC.¹ SIS has accused Intuitive Surgical, Inc. (“Intuitive” or the “Defendant”) of the following five counts: (1) Tying; (2) Exclusive Dealing; (3) Monopolization; (4) Attempted Monopolization; and (5) Unfair Trade Practices – Violation of Lanham Act.² I refer to these counts, collectively, as the “Alleged Wrongdoings.”

I have been asked to calculate lost profit damages in two primary alternative scenarios. In the first scenario, I have been asked to assume Intuitive is found liable for at least one of the Alleged Wrongdoings, and, specifically, that its encryption of its X/Xi EndoWrist products is illegal (“Scenario 1 – Illegal Encryption”). These damages are addressed below.

In the second scenario, I have been asked to assume Intuitive is found liable for at least one of the Alleged Wrongdoings, specifically that its hospital contracts which prevent hospitals from using third parties such as SIS from repairing or otherwise servicing EndoWrists are not enforceable (“Scenario 2 – Unenforceable Contracts”). These damages are addressed below.

I have also been asked to address disgorgement of Intuitive’s profits damages under the Lanham Act (Count 5). I have been asked to quantify this amount based on the lost SIS repair units underlying Scenario 2 lost profits damages above. These damages are addressed below.

B. Alleged Wrongdoings

The Alleged Wrongdoings relate to Intuitive’s da Vinci S/Si and X/Xi robotic surgical systems and the EndoWrist instruments sold for use with these systems. Intuitive has dominant economic power for surgical robots for minimally invasive soft tissue surgery, and for servicing, support and repair of those robots as well as the EndoWrist instruments used with the robots.³ Intuitive has used this economic power to coerce its customers into buying EndoWrists from Intuitive rather than allowing the option of repairing EndoWrists through experienced service

¹ Compl.

² Compl. ¶¶ 111-126.

³ Compl. ¶ 112.

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organizations such as SIS.⁴ Intuitive has conditioned the sale and servicing of its da Vinci surgical robots on customers buying replacement EndoWrists from Intuitive instead of permitting customers to use repaired EndoWrists.⁵

Intuitive has entered into agreements requiring its customers to replace their EndoWrist instruments with new Intuitive EndoWrists, on an exclusive basis, thus foreclosing competition for repair and replacement of such instruments for surgical robots for minimally invasive surgery.⁶ Intuitive maintains at least a 99% market share by excluding competitors through exclusionary tactics as tying EndoWrist replacements and repairs to sales and servicing of da Vinci surgical robots, prohibiting customers from having their EndoWrist instruments repaired, sending cease and desist letters when customers attempt to have EndoWrists repaired and employing countermeasures to the X/Xi instrument usage counter to prevent any modification of the usage counter.⁷

As a direct and proximate result of Intuitive’s conduct, Intuitive’s customers have been forced to purchase new EndoWrists at supra-competitive prices, rather than repairing the existing EndoWrists, resulting in SIS losing customers and incurring lost profits.⁸ As described more below, SIS believes there is and has been “monumental” interest from hospitals in its S/Si and X/Xi repair business.⁹

I have not formed any legal opinions about this matter. However, for purposes of my analysis, I assume Intuitive will be found liable for at least one of the Alleged Wrongdoings.

C. Basis for opinions

My opinions in this matter are based upon analysis of the following information:

- the Complaint, Answer and other legal filings;
- documents produced / provided by the parties;
- depositions and related deposition exhibits;

⁴ Compl. ¶ 112.

⁵ Compl. ¶ 112.

⁶ Compl. ¶ 115. *See, e.g.*, Intuitive-01376477.

⁷ Compl. ¶ 118.

⁸ Compl. ¶¶ 113, 116 and 119, for example. The Complaint also addresses damages to SIS’s reputation and goodwill, although I have not been asked to quantify damages herein for these two items.

⁹ 30(b)(6) Deposition of Keith Johnson 44 (October 27, 2022).

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- the following expert reports:
 - Expert Report of Jean Sargent dated December 2, 2022;
- various legal filings, documents, depositions and related deposition exhibits, and expert reports from the following litigations involving EndoWrists in which Intuitive is also a defendant:¹⁰
 - *Restore Robotics LLC, et al. v. Intuitive Surgical, Inc.*, No. 5:19-cv-00055-TKW-MJF (N.D. Fla. filed Feb. 27, 2019);
 - *Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020);
- discussions with the following SIS personnel (in alphabetical order):
 - Keith Johnson, Executive Vice President, Sales and Clinical Programs;
 - Greg Posdal, President and C.E.O.;
- discussion with Jean Sargent, SIS’s industry expert;
- discussion with Kurt Humphrey, SIS’s technical expert;
- independent research; and
- my skills, knowledge, professional background, education and work experience.

A detailed list of data and other information I have considered at this time in developing my opinions is included as **Attachment 1**. If additional relevant information becomes available after the issuance of my Report, I reserve the right to incorporate such information as necessary. I may also incorporate additional information in response to any expert reports or opinions proffered on behalf of the Defendant.

D. Expert experience and compensation

I am a certified public accountant, accredited in business valuation, a certified valuation analyst and the Managing Director of The BERO Group. Since 1987, I have analyzed economic damages and accounting and financial issues in a variety of litigation matters concerning areas

¹⁰ I understand the *Rebotix Repair LLC* case has settled.

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such as breach of contract, patent infringement, trademark infringement, copyright infringement, trade secrets, anti-trust, dealership disputes and construction disputes. I have testified as an expert more than 160 times. My curriculum vitae, including a list of my testimonial experience in the last four years and publications in the last ten years, is included as **Attachment 2**.

Compensation to The BERO Group for professional services provided in preparing this report is based on our customary hourly fees. My hourly rate is \$675 while the rates for my staff range from \$150 – \$375. The BERO Group has no financial interest in the outcome of this litigation.

E. Trial

In preparing for trial, I may prepare demonstrative exhibits based upon information included in this Report or additional information that becomes available hereafter.

F. Basic damages assumptions

I have been asked to calculate damages assuming a trial date in approximately December 2023 / January 2024. In this instance, as explained in this report, damages would continue through 2025 as shown on **Schedule 1.0**.

As described above, I have been asked to calculate lost profit damages in two primary alternative scenarios. In Scenario 1, I have been asked to assume Intuitive is found liable for at least one of the Alleged Wrongdoings, and, specifically, that its encryption of its X/Xi EndoWrist products is illegal. In Scenario 2, I have been asked to assume Intuitive is found liable for at least one of the Alleged Wrongdoings, specifically that its hospital contracts which prevent hospitals from using third-parties such as SIS from repairing or otherwise servicing EndoWrists are not enforceable.

I have also been asked to calculate disgorgement of Intuitive profits based on the lost SIS repair units underlying Scenario 2 lost profit damages.

In both Scenario 1 and Scenario 2 lost profits and Lanham Act damages, I make the following base assumptions:

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- I assume the parties’ reported revenue, costs and other data are generally accurate and reliable;¹¹
- SIS would have had the capability / capacity to make the lost sales;¹²
- Rebotix or Restore would have had the capability and capacity to produce enough chips to be used in SIS’s EndoWrist repairs;¹³
- SIS would not need FDA approval to make its repairs;¹⁴

In Scenario 1, I assume:

- SIS would have been able to repair both S/Si and X/Xi EndoWrist instruments as of January 1, 2020 (I refer to this as the “In-house model”);¹⁵
- Alternatively, Rebotix or Restore would have been able to repair both S/Si and X/Xi EndoWrist instruments as of January 1, 2020 (I refer to this as the “Distributor model”);¹⁶

In Scenario 2, I assume:

- SIS would have been able to repair S/Si EndoWrist instruments as of January 1, 2020 (the In-house model);¹⁷
- Alternatively, Rebotix or Restore would have been able to repair the S/Si EndoWrist instruments as of January 1, 2020 (the Distributor model);¹⁸
- SIS (relying on either Rebotix, Restore or another third-party technology provider) would have been able to reset the X/Xi EndoWrist instruments use counter either by January 1, 2021 or January 1, 2022, and SIS, Rebotix or Restore would have been able to repair X/Xi EndoWrist instruments as of either January 1, 2021 or January 1 2022;¹⁹

¹¹ If the parties’ reported information is incorrect, I reserve the right to update my analyses accordingly.

¹² As addressed herein.

¹³ Based on SIS's relationships with Rebotix / Restore prior to the Alleged Wrongdoings as addressed herein. Rebotix and Restore are defined below.

¹⁴ Discussions with Keith Johnson and Greg Posdal. *See also*, Deposition of Imron Zafar (November 1, 2022) Ex. 113 at 3.

¹⁵ As addressed herein.

¹⁶ Based on SIS's relationships with Rebotix / Restore prior to the Alleged Wrongdoings as addressed herein.

¹⁷ As addressed herein.

¹⁸ Based on SIS's relationships with Rebotix / Restore prior to the Alleged Wrongdoings as addressed herein.

¹⁹ Based on SIS's relationships with Rebotix / Restore prior to the Alleged Wrongdoings as addressed herein and discussion with Kurt Humphrey, SIS’s technical expert.

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- Either Rebotix, Restore, or another third-party technology company (not SIS), would have incurred the costs associated with circumventing the encryption required to reset the use counter;²⁰

G. Opinions Summary

SIS has incurred lost profits damages due to the Alleged Wrongdoings. I have quantified lost profits damages under Scenario 1- Illegal Encryption and Scenario 2 – Unenforceable Contracts. In both scenarios, I determine alternative SIS damages models wherein SIS would have performed the repair services in-house (the “In-house model”) or SIS would have acted as a repair service distributor (the “Distributor model”).

I have also been asked to damages based on disgorgement of Intuitive profits based on the number of units SIS would have repaired (“Lanham Act damages”) under Scenario 2.

Damages are presented using a January 1, 2024 date, assuming trial is in approximately December 2023 / January 2024. Damages are summarized on **Table 1** below:²¹

Table 1: Damages Summary

	Scenario 1		Scenario 2	
<u>Discounted lost profits</u>				
In-house model	\$102,624,836		\$56,161,130 to	\$80,610,861
Distributor model	\$40,908,930		\$22,424,938 to	\$32,213,625
Lanham Act			\$268,215,839 to	\$385,370,043

²⁰ Based on SIS's relationships with Rebotix / Restore prior to the Alleged Wrongdoings as addressed herein.

²¹ **Schedule 1.0.** Note: The Lanham Act damages represent Intuitive’s sales.

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II. Parties in suit**A. Plaintiff – SIS**

SIS is an Illinois corporation with a principal place of business located in Glendale Heights, IL.²² Greg Posdal is SIS’s President, CEO and majority owner.²³ Keith Johnson is SIS’s Executive Vice President, Sales and Clinical Programs.²⁴

SIS has 50 years of experience servicing surgical instruments and equipment ranging from simple devices such as forceps and scalpels to complex electromechanical devices such as flexible video endoscopes, powered orthopedic devices and surgical video systems.²⁵ SIS employs exhaustive inspection and repair procedures to ensure that previously used surgical instruments are only returned to the operating room in accordance with specifications.²⁶ SIS’s services save healthcare providers and patients millions of dollars a year, reducing the per surgery procedure costs without compromising instrument operation or patient safety.²⁷ SIS is a trusted nationwide partner for hospitals, health care systems and group purchasing organizations (“GPOs”).²⁸ SIS’s relationship with Vizient, Inc., the largest GPO in the U.S., provides SIS access to more than 60% of U.S. acute care hospitals as of 2022.²⁹

SIS’s revenue approximated \$7.0 million, \$10.7 million and \$12.4 million in 2019, 2020 and 2021, respectively.³⁰ In 2022, Greg Posdal estimated SIS’s revenue is expected to approximate \$18 million.³¹ Approximately 85% of SIS’s business is from acute care medical centers and hospitals.³² The majority of SIS’s business is its repair business, including stainless steel instrumentation, rigid endoscopes, flexible endoscopes, orthopedic power instrumentation,

²² Compl. ¶ 12.

²³ 30(b)(1) Deposition of Greg Posdal 16 (November 1, 2022). Plaintiff’s Response to Intuitive’s Interrogatory No. 1 (May 20, 2022).

²⁴ Plaintiff’s Response to Intuitive’s Interrogatory No. 1 (May 20, 2022). Discussion with Keith Johnson.

²⁵ Compl. ¶ 1.

²⁶ Compl. ¶ 1.

²⁷ Compl. ¶ 1.

²⁸ Compl. ¶ 1. I address these “GPO’s” in more detail below.

²⁹ See, e.g., <https://www.vizientinc.com>. I address Vizient, Inc. more below. As addressed below, SIS also has access to the second largest GPO, Premier, Inc., through its relationship with Yankee Alliance.

³⁰ **Schedule 15.0** and discussion with Greg Posdal.

³¹ 30(b)(1) Deposition of Greg Posdal 15 (November 1, 2022).

³² Deposition of Keith Johnson 14 (October 27, 2022).

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video instruments and miscellaneous instruments.³³ I understand SIS’s repair business of hospital-owned instruments (including its EndoWrist repairs) is not regulated by the FDA.³⁴

B. Defendant – Intuitive

Intuitive is a Delaware corporation with a principal place of business located in Sunnyvale, CA.³⁵ Intuitive was founded in 1995.³⁶ Since the late 1990’s, Intuitive has been the leading provider of robotic surgery systems for minimally invasive soft tissue surgeries.³⁷

Intuitive’s main product categories are: (1) Systems, including its da Vinci Surgical System and Ion Endoluminal System; (2) Instruments and Accessories; and (3) Services.³⁸ As described above, EndoWrists, which are included in Intuitive’s Instruments and Accessories category, are the exclusive instruments sold for use with da Vinci Surgical Systems and are at issue in this matter.

Instead of operating directly on a patient, surgeons using Intuitive’s da Vinci Surgical Systems remotely operate a multi-arm surgical robot from a console that receives video of the surgical site and includes means for precisely controlling the movement and operation of surgical tools known as EndoWrists.³⁹

EndoWrists include traditional surgical tools such as forceps and scalpels and are attached to the robotic arms based on the type of surgery to be performed.⁴⁰ The robotic arms include motors that control cables within the EndoWrist in response to the surgeon’s inputs, allowing precise multi-axis movement of the “wrist” of the surgical tool, that is not possible in traditional surgeries.⁴¹

I understand Intuitive’s primary EndoWrists are its Si EndoWrists and X/Xi EndoWrists. I understand Si EndoWrists: 1) Have a “Dallas” chip that has a wired connection to the robot system when attached; 2) The Dallas chip provides protection of data stored on it, including the use counter; 3) The Dallas chip does not monitor or control an EndoWrist’s motion; 4)

³³ 30(b)(1) Deposition of Greg Posdal 11 (November 1, 2022).

³⁴ 30(b)(1) Deposition of Greg Posdal 93-94 (November 1, 2022). Discussions with Keith Johnson and Greg Posdal.

³⁵ Compl. ¶ 13.

³⁶ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 23.

³⁷ Compl. ¶ 2.

³⁸ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 6-10.

³⁹ Compl. ¶ 2.

⁴⁰ Compl. ¶ 2.

⁴¹ Compl. ¶ 2.

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EndoWrist motion is controlled by four motors of robot that control wrist roll, pitch, yaw and grip.⁴²

I understand X/Xi EndoWrists: 1) Have an “Atmel” chip that has a wireless connection to the robot system when attached; 2) The Atmel chip encrypts data stored on it, including the use counter; 3) similar to Dallas chip of the Si EndoWrists, the Atmel chip does not monitor or control an EndoWrist’s motion; 4) similar to the Si EndoWrists, EndoWrist motion is controlled by four motors of robot that control wrist roll, pitch, yaw and grip; 5) provide more security to the use counter than Si EndoWrists.⁴³

Intuitive provides its products through direct sales organizations in the U.S., many European countries, China, Japan, South Korea, India, and Taiwan.⁴⁴ In markets outside the U.S., Intuitive provides its products through distributors.⁴⁵ Intuitive has manufacturing facilities in California, North Carolina, Mexico and Germany.⁴⁶

Intuitive’s revenue approximated \$4.4 billion and \$5.7 billion in its fiscal years ended December 31, 2020 and 2021, respectively.⁴⁷ Intuitive’s revenue from instruments and accessories approximated \$2.5 billion and \$3.1 billion in its fiscal years ended December 31, 2020 and 2021, respectively.⁴⁸ Intuitive had approximately \$3.9 billion of gross profit in 2021, approximately \$3.3 billion of which was from “Products” and \$0.6 billion from “Services.”⁴⁹ Intuitive’s net income approximated \$1.1 billion and \$1.7 billion in its fiscal years ended December 31, 2020 and 2021, respectively.⁵⁰ For its fiscal years ended December 31, 2020 and December 31, 2021, Intuitive’s U.S. revenue approximated 67% - 68% of its total revenue.⁵¹

Intuitive’s revenue, profits and income from 2016 through 2021 are summarized in **Table 2**.⁵²

⁴² See, e.g., 30(b)(6) Deposition of Grant DuQue 11-22 and 59-61 (November 8, 2022).

⁴³ See, e.g., 30(b)(6) Deposition of Grant DuQue 22-41 (November 8, 2022) and Deposition of Grant DuQue 11-22 and 24-52 (November 8, 2022).

⁴⁴ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 13.

⁴⁵ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 13.

⁴⁶ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 14.

⁴⁷ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 68-69.

⁴⁸ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 69.

⁴⁹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 68.

⁵⁰ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 68.

⁵¹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 13 and 68-69.

⁵² Intuitive Surgical, Inc. Form 10-K’s for the fiscal years ended December 31, 2018, 2019, 2020 and 2021 at 84, 71, 84 and 84, respectively.

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Table 2: Intuitive Surgical, Inc. – Historical Financial Summary (in millions)

	2016	2017	2018	2019	2020	2021
Revenue	\$2,706.5	\$3,138.2	\$3,724.2	\$4,478.5	\$4,358.4	\$5,710.1
Gross Profit	\$1,892.9	\$2,202.0	\$2,604.1	\$3,110.2	\$2,861.2	\$3,958.5
Gross Margin %	70%	70%	70%	69%	66%	69%
Income from Operations	\$949.7	\$1,062.9	\$1,199.4	\$1,374.5	\$1,049.8	\$1,821.0
Income from Operations %	35%	34%	32%	31%	24%	32%

III. Additional Parties not in suit – Rebotix and Restore**A. Rebotix**

Rebotix Repair LLC (“Rebotix”) is a Florida limited liability company with its principal address in St. Petersburg, Florida.⁵³ Rebotix provides service and replacement components that help hospitals get back in control of their robotic surgical instruments, such as repairing EndoWrist instruments used in da Vinci robotic surgeries.⁵⁴

Rebotix also sued Intuitive for issues related to servicing its EndoWrists, in which Rebotix claimed: (1) Tying; (2) Exclusive Dealing; (3) Monopolization; and (4) Attempted Monopolization.⁵⁵ I understand that case has settled.

In the spring / summer of 2019, SIS began working with Rebotix on its EndoWrist repair business.⁵⁶ SIS initially provided the repair business customers while Rebotix provided the “Interceptor chip” (or “repair chip”) to reset S / Si EndoWrist counters enabling additional EndoWrist uses as well as the actual repair.⁵⁷

§ The Interceptor was developed for Rebotix by a

⁵³ Compl. ¶ 5 (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

⁵⁴ <https://rebotixrepair.com>. Compl. ¶ 5 (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

⁵⁵ Compl. ¶¶ 62-73 (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

⁵⁶ 30(b)(1) Deposition of Greg Posdal 23-25 (November 1, 2022).

⁵⁷ 30(b)(1) Deposition of Greg Posdal 25 (November 1, 2022).

⁵⁸ Deposition of Chris Gibson 35-38 (June 22, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

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third party (G5 Engineering), and it took approximately two years to develop.⁵⁹ The Interceptor chip was used for Si Instruments.⁶⁰

SIS intended to bring the EndoWrist repair work in-house, like it does with its other repair services, while purchasing the Interceptor chip from Rebotix (and/or a similar chip from another company, Restore, addressed below).⁶¹ In 2019, SIS and Rebotix had a draft agreement, that would have required SIS to purchase 50 Interceptors for up to \$800 per interceptor.⁶² This draft agreement was never executed.⁶³

While SIS and Rebotix did not have a signed agreement, they had a verbal understanding their relationship would continue.⁶⁴ The parties had begun discussions and plans for Rebotix to assist SIS in setting up its EndoWrist repair servicing process.⁶⁵ During this initial ramp-up period, Rebotix sold the repair chip and service to SIS for prices consistent with those included in the draft distributor agreement.⁶⁶ I understand SIS and Rebotix contemplated volume discounts if the repair business grew.⁶⁷ Repair prices ranged from \$750 to \$1,300 per EndoWrist.⁶⁸

In January 2020, a Memorandum of Understanding was drafted between SIS and Rebotix, which contained proposed pricing terms for Interceptor chips, including volume discounts up to at \$450 per Interceptor chip at 300 units, but like the original draft, this draft agreement was never executed.⁶⁹ Rebotix and SIS stopped working together shortly thereafter.⁷⁰

⁵⁹ Deposition of Chris Gibson 40 and 59 (June 22, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

⁶⁰ Deposition of Stan Hamilton 38 (November 4, 2022).

⁶¹ 30(b)(1) Deposition of Greg Posdal 25 (November 1, 2022).

⁶² Deposition of Chris Gibson 162-163 (June 22, 2021) and REBOTIX061127-138 at 128-129 (Gibson Dep. Ex. 13) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

⁶³ Deposition of Chris Gibson 163 (June 22, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)). Discussion with Greg Posdal.

⁶⁴ 30(b)(1) Deposition of Greg Posdal 41-42 (November 1, 2022).

⁶⁵ 30(b)(1) Deposition of Greg Posdal 41-42 (November 1, 2022).

⁶⁶ **Schedule 10.1.** See also, REBOTIX162208-162212 at 212.

⁶⁷ Discussion with Greg Posdal.

⁶⁸ **Schedule 10.1.**

⁶⁹ Deposition of Chris Gibson 165-167 (June 22, 2021) and REBOTIX067735-737 (Gibson Dep. Ex. 14) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)). Discussion with Greg Posdal.

⁷⁰ Discussion with Greg Posdal.

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Rebotix started working with Restore (as addressed below) in 2018.⁷¹ Originally, Restore was going to be a distributor for Rebotix, meaning they would get the EndoWrists from hospitals, send them to Rebotix for repair and reset, and then deliver them back to hospitals.⁷² Restore then started buying Interceptors from Rebotix, so that Restore could do the repair and reset.⁷³ Rebotix sold the Interceptor to Restore for an average price of approximately \$533 per chip.⁷⁴ It appears Restore received a larger discount with higher chip purchases.⁷⁵ Ultimately, Rebotix stopped working with Restore because Restore wasn’t doing the volume Rebotix expected them to have.⁷⁶

B. Restore

Restore Robotics LLC and Restore Robotics Repair LLC (collectively, “Restore”) are Florida limited liability companies with their principal address in Panama City Beach, Florida.⁷⁷ They are sister companies with common ownership having majority control of both companies.⁷⁸ Restore services surgical robots and related instruments, Restore Robotics is the sales arm and Restore Robotics Repairs is the operations arm.⁷⁹

Restore also sued Intuitive for issues related to servicing its EndoWrists, in which Rebotix claimed: (1) Monopolization; (2) Attempted Monopolization; (3) Tying; and (4) Exclusive Dealing.⁸⁰ I understand the case is ongoing.

SIS and Restore are partners in SIS’s EndoWrist recovery business.⁸¹ SIS’s EndoWrist recovery business identifies an EndoWrists’ available lives remaining and confirms EndoWrist

⁷¹ Deposition of Clifton Parker 142 (October 25, 2022).

⁷² Deposition of Chris Gibson 143-144 (June 22, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

⁷³ Deposition of Chris Gibson 144 (June 22, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

⁷⁴ **Schedule 10.0.**

⁷⁵ **Schedule 10.0.**

⁷⁶ Deposition of Chris Gibson 145-146 (June 22, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

⁷⁷ Second Am. Compl. ¶ 1 (*Restore Robotics LLC, et al. v. Intuitive Surgical, Inc.*, No. 5:19-cv-00055-TKW-MJF (N.D. Fla. filed Feb. 27, 2019)).

⁷⁸ Second Am. Compl. ¶ 1 (*Restore Robotics LLC, et al. v. Intuitive Surgical, Inc.*, No. 5:19-cv-00055-TKW-MJF (N.D. Fla. filed Feb. 27, 2019)).

⁷⁹ Second Am. Compl. ¶ 1 (*Restore Robotics LLC, et al. v. Intuitive Surgical, Inc.*, No. 5:19-cv-00055-TKW-MJF (N.D. Fla. filed Feb. 27, 2019)).

⁸⁰ Second Am. Compl. ¶¶ 106-129 (*Restore Robotics LLC, et al. v. Intuitive Surgical, Inc.*, No. 5:19-cv-00055-TKW-MJF (N.D. Fla. filed Feb. 27, 2019)).

⁸¹ 30(b)(6) Deposition of Greg Posdal 51 (November 1, 2022).

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instrument functionality.⁸² SIS essentially is the recovery business sales arm, bringing in recovery business customers, while Restore checks the EndoWrist instruments for remaining lives and checks functionality.⁸³ The EndoWrist recovery process involves attaching a reader to an EndoWrist instrument, which reads and notes the number of available lives the instrument has, and the EndoWrist instrument is then returned to its hospital.⁸⁴ SIS had never worked directly with Restore prior to the EndoWrist business, although it had worked with a Restore affiliate on an unrelated product line.⁸⁵

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]⁸⁹

IV. Intuitive’s da Vinci surgical system

A. Launched in 1999

In 1999, Intuitive launched its first da Vinci surgical system.⁹⁰ In 2000, the U.S. Food and Drug Administration cleared the da Vinci surgical system for general laparoscopic surgery.⁹¹

⁸² Discussion with Greg Posdal. *See also, e.g.*, SIS010151.

⁸³ 30(b)(6) Deposition of Greg Posdal 51 (November 1, 2022). Discussion with Greg Posdal.

⁸⁴ 30(b)(6) Deposition of Greg Posdal 51-52 (November 1, 2022).

⁸⁵ 30(b)(1) Deposition of Greg Posdal 67 (November 1, 2022).

⁸⁶ Deposition of Kevin May 79 (November 3, 2022).

⁸⁷ Deposition of Clifton Parker 130 (October 25, 2022). Restore-00027409-00027420 at 411 (Parker Dep. Ex. 130).

⁸⁸ Deposition of Kevin May 100-101 (November 3, 2022).

⁸⁹ **Schedule 10.0.**

⁹⁰ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 6.

⁹¹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 6.

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B. da Vinci Products – 5 categories

Intuitive’s da Vinci products fall into five categories: (1) da Vinci Surgical Systems; (2) da Vinci instruments and accessories; (3) da Vinci stapling; (4) da Vinci services; and (5) da Vinci Vision, including Firefly Fluorescence imaging systems and da Vinci Endoscopes.⁹² Intuitive also provides a comprehensive suite of systems, learning and services options.⁹³

C. da Vinci Surgical System Models

Intuitive has commercialized the following da Vinci surgical systems:⁹⁴

- Standard – 1999
- da Vinci S – 2006
- da Vinci Si – 2009
- da Vinci Xi – 2014
- da Vinci X – 2017
- da Vinci SP – 2018

The da Vinci SP Surgical System accesses the body through a single incision while the other da Vinci Surgical Systems access the body through multiple incisions.⁹⁵ Intuitive had a “measured launch” of its da Vinci SP Surgical Systems, and, as of December 31, 2021, it had an installed base of 99 da Vinci SP Surgical Systems.⁹⁶

The da Vinci Si is used primarily for single organ surgery, encompassing uterus, prostate, kidney, bladder, lung etc.⁹⁷ The introduction of the Xi model enabled multi-quadrant surgery and was aimed at expanding the target market into general surgery.⁹⁸ As of September 2016, Intuitive projected that, of the over 2,600 then-installed Si systems, between 100 and 350 (with an estimated peak of 347 systems in 2020) would be traded back to Intuitive each year.⁹⁹ It was

⁹² Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 55.

⁹³ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 55.

⁹⁴ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 55.

⁹⁵ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 55.

⁹⁶ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 55.

⁹⁷ Intuitive-00102938-00102989 at 942.

⁹⁸ Intuitive-00102938-00102989 at 942.

⁹⁹ Intuitive-00102938-00102989 at 942.

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also estimated that Si systems would continue to be in active clinical use well past 2027, when there would be over 250 systems installed, representing a very “long tail” of support for an aging, but still very clinically useful, product.¹⁰⁰ As of September 2019, Intuitive discontinued the sale of certain EndoWrist Instruments on the Si robot.¹⁰¹ I understand Intuitive provided incentives for customers to upgrade to the X/Xi and informed its customers that it would not service Si systems or allow purchase of Si instruments past 2024 or whatever was in a customer’s contract.¹⁰²

D. Placed primarily in acute care hospitals¹⁰³

The da Vinci Surgical Systems (including EndoWrists) are primarily placed (i.e., sold or leased) for use in acute care hospitals.¹⁰⁴ I understand the number of acute care hospitals in the U.S. changes over time for a variety of reasons, such as how hospitals are categorized and timing.¹⁰⁵ In 2019, according to the Centers for Medicare and Medicaid, there were approximately 4,749 acute care hospitals in the U.S.¹⁰⁶ According to the American Hospital Association, in 2022 there were 6,093 hospitals in the U.S., of which 5,139 were community hospitals, which include acute care hospitals.¹⁰⁷ According to another health care website, there were approximately 4,200 acute health care hospitals in the U.S. as of March 2022.¹⁰⁸

¹⁰⁰ Intuitive-00102938-00102989 at 942.

¹⁰¹ SIS009443-449 at 444.

¹⁰² See, e.g., Intuitive-00389936; Deposition of Todd Tourand 22-26 (November 4, 2022).

¹⁰³ Intuitive uses the word “placement” in its 10-K, presumably because some of its da Vinci Surgical Systems are “placed” under operating leases and not sold. Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 69.

¹⁰⁴ Discussion with Keith Johnson; I understand invasive procedures that are amenable to the use of robotics in surgeries are also performed as outpatient procedures (Intuitive-00808372-00808551 at 388).

¹⁰⁵ Discussion with Jean Sargent.

¹⁰⁶ <https://www.carevoyance.com/blog/acute-care-hospitals>.

¹⁰⁷ <https://www.aha.org/statistics/fast-facts-us-hospitals>.

¹⁰⁸ See, e.g., <https://www.definitivehc.com/blog/how-many-hospitals-are-in-the-us>. This information was as of March 2022, and this amount consists of 3,822 short-term acute care hospitals and 394 long-term acute care hospitals.

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E. da Vinci Surgical System Components

The da Vinci surgical system is comprised of a surgeon’s console, patient-side cart, 3DHD vision system, Firefly fluorescence imaging components and a da Vinci integrated table motion.¹⁰⁹

1. Surgeon’s Console

The da Vinci Surgical System allows surgeons to operate while comfortably seated at an ergonomic console viewing a 3DHD image of the surgical field.¹¹⁰ The da Vinci Surgical System is designed to allow surgeons to operate while seated, which may be clinically advantageous because of reduced surgeon fatigue.¹¹¹ The surgeon’s fingers grasp instrument controls below the display with the surgeon’s hands naturally positioned relative to his or her eyes.¹¹² Using electronic hardware, software, algorithms, and mechanics, the technology translates the surgeon’s hand movements into precise and corresponding real-time micro movements of the da Vinci instruments positioned inside the patient.¹¹³ A second surgeon’s console may be used on the da Vinci X, da Vinci Xi, and da Vinci Si models.¹¹⁴

2. Patient-Side Cart

The patient-side cart holds electromechanical arms that manipulate the instruments inside the patient.¹¹⁵ Up to four arms attached to the cart can be positioned, as appropriate, and then locked into place.¹¹⁶ At least two arms hold surgical instruments, one representing the surgeon’s left hand and one representing the surgeon’s right hand.¹¹⁷ A third arm positions the endoscope, allowing the surgeon to easily move, zoom, and rotate the field of vision.¹¹⁸ A fourth instrument arm extends surgical capabilities by enabling the surgeon to add a third instrument to perform

¹⁰⁹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 6-7.

¹¹⁰ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 6.

¹¹¹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹¹² Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 6.

¹¹³ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 6-7.

¹¹⁴ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹¹⁵ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹¹⁶ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹¹⁷ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹¹⁸ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

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additional tasks.¹¹⁹ The fourth instrument arm is a standard, integrated feature on the da Vinci X, da Vinci Xi, and da Vinci Si Surgical Systems.¹²⁰

3. 3DHD Vision System

The vision system includes a 3DHD endoscope with two independent vision channels linked to two separate color monitors through sophisticated image processing electronics and software.¹²¹ The resulting 3DHD image has high resolution, high contrast, low flicker, and low cross fading.¹²² A digital zoom feature in the 3DHD vision system allows surgeons to magnify the surgical field of view without adjusting the endoscope position and, thereby, reduces interference between the endoscope and instruments.¹²³ The 3DHD vision system is a standard, integrated feature on the da Vinci X, da Vinci Xi, da Vinci SP, da Vinci Si, and da Vinci S Surgical Systems.¹²⁴

4. Firefly Fluorescence Imaging (“Firefly”)

Firefly is a standard feature of the da Vinci X and da Vinci Xi Surgical Systems and is available as an upgrade on the da Vinci Si Surgical System.¹²⁵ This imaging capability combines an injectable fluorescent dye with a specialized da Vinci camera head, endoscope, and laser-based illuminator to allow surgeons to identify vasculature, tissue perfusion, or biliary ducts in three dimensions beneath tissue surfaces in real-time.¹²⁶ Firefly is typically used in the procedure categories of urology, gynecology, and general surgery.¹²⁷

5. Da Vinci Xi Integrated Table Motion

Integrated Table Motion coordinates the movements of the da Vinci robotic arms with an advanced operating room (“OR”) table to enable managing the patient’s position in real-time

¹¹⁹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²⁰ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²¹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²² Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²³ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²⁴ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²⁵ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²⁶ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²⁷ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

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while the da Vinci robotic arms remain docked.¹²⁸ This gives OR teams the capability to optimally position the operating table during da Vinci Surgical System procedures.¹²⁹ Integrated Table Motion enables surgeons to maximize reach, facilitate access, and choose the angle of approach to target anatomy, as well as reposition the table during the procedure to enhance anesthesiologists’ management of the patient.¹³⁰

F. U.S. systems sales – 600 and 865 systems placed in 2020 and 2021

Intuitive placed 600 and 865 U.S. da Vinci Surgical Systems in 2020 and 2021, respectively.¹³¹ Worldwide, Intuitive placed 936 and 1,347 da Vinci Surgical Systems in 2020 and 2021, respectively.¹³²

G. Installed U.S. daVinci systems – 3,720 units and 4,139 units as of December 31, 2020 and December 31, 2021

Intuitive’s installed U.S. daVinci systems base grew from 3,531 units as of December 31, 2019¹³³ to 3,720 units as of December 31, 2020¹³⁴ and 4,139 units as of December 31, 2021.¹³⁵ Worldwide, Intuitive’s installed base grew from 5,582 units as of December 31, 2019,¹³⁶ 5,989 units as of December 31, 2020¹³⁷ and 6,730 units as of December 31, 2021.¹³⁸

H. Number of daVinci procedures

There are approximately 70 representative clinical uses for da Vinci Surgical Systems.¹³⁹ Intuitive uses the number of da Vinci procedures as metrics for financial and operation decision making and to evaluate period-to-period comparisons.¹⁴⁰ Intuitive believes the number and type

¹²⁸ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹²⁹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹³⁰ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

¹³¹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 69. Intuitive uses the word “placement” in its 10-K, presumably because some of its da Vinci Surgical Systems are “placed” under operating leases and not sold.

¹³² Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 69.

¹³³ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2019 at 10.

¹³⁴ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2020 at 10.

¹³⁵ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 12.

¹³⁶ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2019 at 10.

¹³⁷ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2020 at 10.

¹³⁸ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 12.

¹³⁹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 12.

¹⁴⁰ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 62.

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of da Vinci procedures provide meaningful information regarding its performance, and that procedure volume is an indicator of the rate of adoption of robotic-assisted surgery and an indicator of future revenue.¹⁴¹

Worldwide, approximately 1,229,000, 1,243,000 and 1,594,000 surgical procedures were performed with da Vinci Surgical Systems in 2019, 2020 and 2021, respectively.¹⁴² In the U.S., approximately 883,000, 876,000 and 1,109,000 surgical procedures were performed with da Vinci Surgical Systems in 2019, 2020 and 2021, respectively.¹⁴³ General surgery was Intuitive’s largest and fastest growing specialty in the U.S. in 2021 with approximately 589,000 procedures, followed by gynecology with approximately 316,000 procedures and urology with approximately 153,000 procedures.¹⁴⁴

I. da Vinci Surgical Systems Sales and Profits

Intuitive does not break out its da Vinci Systems sales and profits on its 10-K’s. From 2017 through 2020, Intuitive’s “Systems” revenue ranged from approximately \$900 million to \$1.35 billion per year,¹⁴⁵ the majority of which appears to be revenue for da Vinci Surgical Systems.¹⁴⁶ Intuitive’s contribution margins on its “Systems” revenue ranged from approximately 60% to 67% from 2017 through 2020.¹⁴⁷ Intuitive’s contribution margin includes direct labor, direct materials, sales commissions and a few other associated costs.¹⁴⁸ Intuitive considers contribution margins to be more meaningful than gross margins.¹⁴⁹

V. Intuitive’s EndoWrist Instruments and Accessories

Intuitive offers a comprehensive suite of stapling, energy, and core instrumentation for its surgical systems.¹⁵⁰ Intuitive also sells accessory products and other instruments used in

¹⁴¹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 62.

¹⁴² Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 63.

¹⁴³ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 63.

¹⁴⁴ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 63.

¹⁴⁵ Marshall Mohr Dep. Ex. 234 (Intuitive-00595405).

¹⁴⁶ Based on Intuitive’s 10-K’s, da Vinci Surgical Systems appear to make up the majority of its “Systems” revenue.

¹⁴⁷ Marshall Mohr Dep. Ex. 234 (Intuitive-00595405).

¹⁴⁸ 30(b)(6) Deposition of Marshall Mohr 34 (November 7, 2022).

¹⁴⁹ 30(b)(6) Deposition of Marshall Mohr 33-34 (November 7, 2022).

¹⁵⁰ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7.

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conjunction with daVinci Surgical Systems such as sterile drapes, vision products, camera heads and light guides.¹⁵¹

Intuitive’s EndoWrist instruments include forceps, scissors, electrocautery tools and other surgical tools that are sold for use with da Vinci Surgical Systems.¹⁵² EndoWrist instruments are offered in a variety of diameters, of which 8mm and 12mm diameters are the most commonly sold.¹⁵³ A variety of instruments can be selected and used interchangeable during surgery.¹⁵⁴

A. 10 to 18 uses per EndoWrist

A programmed memory chip inside each instrument performs several functions that help determine how the da Vinci system and instruments work together.¹⁵⁵ The memory chip will generally not allow the instrument to be used for more than the prescribed number of procedures.¹⁵⁶ When the usage counter reaches a specified number of uses, the instrument is rendered unusable with the da Vinci robot.¹⁵⁷ EndoWrists are sold with a limited number of uses (or “lives”), ranging from 10 to 18 uses, depending on instrument type and whether it is a Si/X/Xi.¹⁵⁸

In 2020, Intuitive introduced an “Extended Use Program” for select da Vinci X/Xi instruments possessing 12 to 18 uses compared to the previous 10-use limit for these EndoWrist instruments.¹⁵⁹ I understand the design of the “Extended Use” instruments was similar to 10-use limit instruments and the costs of the “Extended Use” instruments to Intuitive would be “really close” to instruments with 10 uses.¹⁶⁰

¹⁵¹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 8.

¹⁵² Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 8.

¹⁵³ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 7-8.

¹⁵⁴ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 8.

¹⁵⁵ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 8.

¹⁵⁶ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 8.

¹⁵⁷ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2020 at 7.

¹⁵⁸ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 8. *See also, e.g.*, Intuitive’s October 2021 Instrument and Accessory Catalog X Xi.pdf. I understand all Si EndoWrists only have 10 uses.

¹⁵⁹ Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021 at 8; *see also*, Intuitive-00004692-00004704 at 695-696.

¹⁶⁰ *See, e.g.*, Deposition of Sharathchandra “Shark” Somayaji 94-103 (November 8, 2022). I understand Extended Use EndoWrist instruments also sell for more than 10-use EndoWrists.

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B. S/Si and X/Xi EndoWrists are essentially the same (except for encryption)

I understand Intuitive’s S/Si and X/Xi EndoWrist instruments are used for the same applications and essentially perform the same functions.¹⁶¹ The primary difference is the encryption for the X/Xi instruments is different than it is for the S/Si instruments.¹⁶² [REDACTED]

[REDACTED]

C. U.S. S/Si and X/Xi EndoWrist annual unit sales – 2014 through annualized 2022

Intuitive’s S/Si and X/Xi EndoWrist unit sales, which were potentially repairable by SIS, from 2014 through annualized 2022 are summarized in **Table 3**.¹⁶⁴

Table 3: Intuitive’s S/Si and X/Xi EndoWrist unit sales, which were potentially repairable by SIS: 2014 – annualized 2022

	2014	2015	2016	2017	2018	2019	2020	2021	2022 (annualized)	Total
S/Si	199,258	188,205	183,207	171,337	144,114	104,728	52,970	22,411	8,214	1,074,444
X/Xi	10,436	42,961	78,556	128,069	189,175	266,399	299,954	346,579	365,304	1,727,433
Total	209,694	231,166	261,763	299,406	333,289	371,127	352,924	368,990	373,518	2,801,877

D. EndoWrist sales and profits

Intuitive’s “Instruments & Accessories” revenue, the majority of which comes from EndoWrists,¹⁶⁵ increased from approximately \$1.6 billion in 2017 to almost \$2.5 billion in 2020.¹⁶⁶ Intuitive’s contribution margins on its “Instruments and Accessories” ranged from approximately 72% to 75% between 2017 and 2020.¹⁶⁷ Intuitive’s instruments generally have

¹⁶¹ See, e.g., Deposition of Grant DuQue 25-36, 48-52 and 156-157 (November 8, 2022).

¹⁶² See, e.g., 30(b)(6) Deposition of Grant DuQue 30-41 (November 8, 2022) and Deposition of Sharathchandra “Shark” Somayaji 108-112 and 122-124 (November 8, 2022).

¹⁶³ Deposition of Clifton Parker 133-134 (October 25, 2022).

¹⁶⁴ **Schedule 13.0.**

¹⁶⁵ 30(b)(6) Deposition of Marshall Mohr 44-45 (November 7, 2022).

¹⁶⁶ Marshall Mohr Dep. Ex. 234 (Intuitive-00595405).

¹⁶⁷ Marshall Mohr Dep. Ex. 234 (Intuitive-00595405).

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higher margins than its accessories.¹⁶⁸ For example, Intuitive has sold EndoWrists with gross margins over 90%.¹⁶⁹

E. Expired and potentially repairable EndoWrists approximate 60% of current year units sold

Not all EndoWrists sold would necessarily expire, and inherently there would be some amount of time lag between an initial unit sale and subsequent expiration. To my knowledge, Intuitive does not publish the number of expired EndoWrist units. However, based on Intuitive projections, it appears the number of expired EndoWrists was expected to reasonably approximate 60% of EndoWrists sold in the current year.¹⁷⁰

In approximately August 2017, Intuitive projected 2018 through 2022 annual expirations for the “Top 5” X/Xi EndoWrist instruments and core X/Xi EndoWrist instruments.¹⁷¹ As noted above, annual X/Xi EndoWrist sales were increasing and have continued to increase.

The projected 2018 Top 5 X/Xi EndoWrist expired unit sales comprised 60% of the total actual 2018 Top 5 X/Xi EndoWrist unit sales.¹⁷² **Table 4** below shows Intuitive’s projected 2018 and 2019 Top 5 X/Xi EndoWrists expired unit sales as a percentage of the actual 2018 and 2019 2020 EndoWrist sales for those same 5 instruments.¹⁷³

Table 4: Projected Top 5 X/Xi EndoWrist expired units and Actual Top 5 X/Xi EndoWrist units

	2018	2019	Total
Projected Top 5 X/Xi EndoWrists expired units	73,129	100,376	173,505
Actual Top 5 X/Xi EndoWrists expired units	121,440	166,666	288,106
Projected as a % of actual	60%	60%	60%

¹⁶⁸ 30(b)(6) Deposition of Marshall Mohr 41-42 (November 7, 2022).

¹⁶⁹ Intuitive-00686044.

¹⁷⁰ **Schedule 7.0.**

¹⁷¹ 30(b)(6) Deposition of Colin Morales 35-43 (November 1, 2022). *See also*, Morales Dep. Ex.’s 139, 140 and 141 at 1.

¹⁷² **Schedule 7.0.**

¹⁷³ **Schedule 7.0.**

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VI. SIS’s EndoWrist repair service

In 2019, SIS began selling and promoting its EndoWrist repair service business.¹⁷⁴ The initial focus of SIS’s EndoWrist repair service was for Intuitive’s S/Si instruments.¹⁷⁵ SIS gave multiple EndoWrist repair service presentations to the U.S.’s largest GPO (Vizient, Inc.), and to a division (Yankee Alliance) of the second largest GPO (Premier),¹⁷⁶ who, between them, cover the majority of acute health care providers in the U.S.¹⁷⁷ As described more below, SIS and Vizient entered into an agreement specific to EndoWrist repairs in September 2019.¹⁷⁸

SIS also gave EndoWrist repair service presentations and had live or virtual meetings with at least the following 29 health care systems:¹⁷⁹

1. Banner Health System with 33 hospitals;
2. Legacy Health with 6 hospitals;
3. Providence Health System with 53 hospitals;
4. Marin Health;
5. Honor Health with 6 hospitals;
6. Methodist Hospital of Southern California;
7. Memorial Care with 3 Hospitals;
8. University Medical Center Irvine;
9. Kaiser Permanente with 50 plus hospitals;
10. USC Medical Center;
11. University of Illinois Medical Center;
12. Johns Hopkins MC;
13. Advocate Aurora Health System with 24 hospitals;
14. Ardent Health with 33 hospitals;
15. University Michigan Medical Center;
16. Duke University Medical Center;
17. Piedmont Healthcare with 17 hospitals;

¹⁷⁴ Discussions with Keith Johnson and Greg Posdal.

¹⁷⁵ 30(b)(1) Deposition of Greg Posdal 35 (November 1, 2022). Discussions with Keith Johnson and Greg Posdal.

¹⁷⁶ Plaintiff’s Response to Intuitive’s Interrogatory No. 2 (May 20, 2022). Discussion with Keith Johnson.

¹⁷⁷ Discussion with Keith Johnson. *See, e.g.*, SIS001621-001629 and SIS010691-010707.

¹⁷⁸ SIS000047-000049.

¹⁷⁹ Plaintiff’s Response to Intuitive’s Interrogatory No. 2 (May 20, 2022). Discussion with Keith Johnson.

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18. Salinas Valley Medical Center;
19. Pomona Valley Medical Center;
20. UHS with 33 hospitals;
21. SSM with 23 hospitals;
22. Redland Community Hospital;
23. Northside Health with 6 hospitals;
24. Northeast Georgia Health with 6 hospitals;
25. Mayo Clinic;
26. Beth Israel Lahey Health with 13 hospitals;
27. Boston Children’s Medical Center;
28. Indiana University Health;
29. Northwestern Memorial Healthcare;

A. Monumental Interest in SIS’s repair program

Consistent with the many presentations in a short period, the GPO’s and hospital systems’ interest in SIS’s repair program was “monumental.” According to Keith Johnson, SIS’s Vice President of Executive Sales and Clinical Programs, SIS had meetings with what probably represented over a thousand hospitals about SIS’s Xi repair program.¹⁸⁰ Keith Johnson also testified he has presented to multiple groups of Vizient regional employees and representatives.¹⁸¹

Keith Johnson testified SIS’s potential EndoWrist business revenue was somewhere in the range of \$250 million to \$350 million per year, based on:¹⁸²

...conversations I had with key customers to understand the number of robotics they had, the number of robots they had, the dollars spent on devices and instrumentation for those robots, and

¹⁸⁰ 30(b)(6) Deposition of Keith Johnson 44-45 (October 27, 2022). Mr. Johnson listed the following hospitals he has spoken to about SIS’s Xi repair program: Legacy Health, Providence Health System, Sutter Health, Kaiser Permanente, Memorial Care, the UC California system, Banner Health System, Honor Health, Baylor Scott & White, University health systems across the country from Michigan to Duke to North Carolina, Mayo Clinic, Cleveland Clinic, Advocate Aurora, Lahey Health System, Boston’s Children’s Medical Center, Piedmont Health System, Piedmont and John Hopkins.

¹⁸¹ 30(b)(6) Deposition of Keith Johnson 45 (October 27, 2022). *See also*, SIS343965-343971 at 970, where the four Vizient regions are identified as West, Central, Southeast and Northeast Zones. Based on discussions with Keith Johnson, I understand he misspoke in his deposition, as he never gave a presentation to Vizient’s Northeast Zone.

¹⁸² Deposition of Keith Johnson 17 (October 27, 2022).

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then looking at our global customer list through Vizient and the opportunities we would have.

Regarding customer demand, Keith Johnson testified:¹⁸³

...Every person I called, every organization I called, took a meeting. We sat down with all of them. They were – they all wanted it.

The reason that we felt great about scalability is we didn’t have any competition, we were it. It was a program everybody wanted, there – we weren’t fighting the OEM on the repairs, we weren’t fighting other companies, it was us, so the ability to scale was – was huge.

While Intuitive’s S/Si business was SIS’s initial focus, there was “monumental” interest from hospitals in its X/Xi repair business.¹⁸⁴ For example, Keith Johnson testified “the interest in saving and reducing costs on robotic surgery in the industry is something I’ve never seen before in my 25 years of being in the surgical business.”¹⁸⁵

B. SIS’s sales prices ranging from \$1,100 to \$1,700 per repair, representing an average discount of 42%

SIS’s pricing for the EndoWrist products ranged from \$1,100 to \$1,700 and covered 38 different EndoWrist products.¹⁸⁶ As shown on **Schedule 12.2** these prices represented an average discount of 42% off Intuitive’s new instrument prices.

C. SIS’s estimated repair services applied to all U.S. da Vinci systems’ installed base equates to more than \$800 million potential EndoWrist repair service revenue per year

In December 2019, Keith Johnson estimated that SIS could average \$220,000 in gross revenue per year per Si robot for its services based on discussions with various customers.¹⁸⁷ The revenue per robot expectations for X / Xi robots were similar.¹⁸⁸

¹⁸³ Deposition of Keith Johnson 20 (October 27, 2022).

¹⁸⁴ 30(b)(6) Deposition of Keith Johnson 44 (October 27, 2022). Discussion with Keith Johnson.

¹⁸⁵ 30(b)(6) Deposition of Keith Johnson 44 (October 27, 2022).

¹⁸⁶ SIS0000047-0000049.

¹⁸⁷ Discussion with Keith Johnson.

¹⁸⁸ Discussion with Keith Johnson.

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An October 2019 Banner Health presentation noted that Banner Health had spent approximately \$8.8 million on EndoWrist instruments in the past 24 months for its 13 Si robots.¹⁸⁹ This calculates to approximately \$338,000 per year per Si robot.¹⁹⁰

Applying \$220,000 to Intuitive’s total 3,720 December 31, 2020 U.S. da Vinci systems installed base (all da Vinci systems) equates to a potential \$818.4 million annual SIS EndoWrist service revenue in 2021.¹⁹¹

D. Subcontracted 2019 repair work to Rebotix

At SIS’s EndoWrist repair business inception in 2019, SIS subcontracted its repair work to Rebotix.¹⁹² SIS had long-standing direct relationships and a strong reputation with hospitals, and SIS and Rebotix discussed (but never executed) a distributor agreement.¹⁹³ As addressed above, SIS generated monumental interest and did begin selling and distributing repair services.

Rebotix initially repaired SIS’s EndoWrists. The EndoWrist repair process included initial disassembly and inspection, checking the mechanical operation and integrity of all mechanical components, an electrical integrity check to confirm integrity of electrical insulation, cleaning, sharpening or alignment of the instrument tip, a series of tests to confirm movements of the instrument tip are within original specifications, and setting the counter to a value corresponding to the initial setting of a new EndoWrist instrument.¹⁹⁴ Under this repair process, third parties such as Rebotix were suppliers to SIS (or SIS was the distributor), which had client contracts.¹⁹⁵

¹⁸⁹ SIS009443-949 at 947-948. Discussion with Keith Johnson.

¹⁹⁰ \$8.8 million / 2 = \$4,400,000 per year. \$4,400,000 / 13 robots = approximately \$338,000 per Si robot per year.

¹⁹¹ 3,720 installed base (per above) x \$220,000 per robot = approximately \$818.4 million. Using the installed base as an estimate for potential 2021 revenue likely understates this amount, since it does not take into account any other units placed into service during 2021.

¹⁹² Plaintiff’s Response to Intuitive’s Interrogatory No. 5 (August 8, 2022). *See also*, 30(b)(1) Deposition of Greg Posdal 23-27 (November 1, 2022).

¹⁹³ Plaintiff’s Response to Intuitive’s Interrogatory No. 5 (August 8, 2022).

¹⁹⁴ Plaintiff’s Response to Intuitive’s Interrogatory No. 5 (August 8, 2022).

¹⁹⁵ Plaintiff’s Response to Intuitive’s Interrogatory No. 5 (August 8, 2022).

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E. Initial EndoWrist Repair Sales and Customers

While SIS’s repair business caught Intuitive’s attention, SIS’s initial EndoWrist repairs were minimal before they were stopped. SIS serviced 49 EndoWrists and had at least \$38,900 in total revenue with a price range of \$1,100 to \$1,700 per EndoWrist repair.¹⁹⁶

Prior to Intuitive’s actions of sending cease and desist letters to SIS’s customers and potential customers, SIS’s EndoWrist repair customers included Legacy Health System, Marin Health Medical Center, Kaiser Permanente Fontana Medical Center and Advocate Aurora Health System and its potential customers included Banner Health System, Piedmont Healthcare and Vizient, among others.¹⁹⁷

F. Intended to repair EndoWrists in-house

SIS intended to bring all EndoWrist repairs in-house to its Glendale Heights facility.¹⁹⁸ SIS began setting up its own repair capabilities at its facilities in Glendale Heights, Illinois, based on the existing Rebotix process.¹⁹⁹

In February 2020, SIS hosted an EndoWrist repairs meeting at its Glendale Heights facility.²⁰⁰ Multiple representatives of a large hospital system with tens of millions of dollars in annual EndoWrist costs attended.²⁰¹ The attendees discussed SIS performing repairs of EndoWrists, i.e., with third parties such as Rebotix providing the updated chip and SIS performing the underlying repairs at its facilities.²⁰²

G. EndoWrist Recovery (as opposed to repair) Program

SIS also offers a Robotic EndoWrist Inspection and Recovery Program wherein SIS recovers and inspects instruments to determine if the instrument(s) have any remaining uses.²⁰³

¹⁹⁶ **Schedule 14.0.**

¹⁹⁷ Plaintiff’s Response to Intuitive’s Interrogatory No. 4 (August 8, 2022). SIS000167 (Posdal Dep. Ex. 142). Discussion with Keith Johnson.

¹⁹⁸ 30(b)(1) Deposition of Greg Posdal 25-31 (November 1, 2022).

¹⁹⁹ Plaintiff’s Response to Intuitive’s Interrogatory No. 5 (August 8, 2022). Discussion with Greg Posdal.

²⁰⁰ Plaintiff’s Response to Intuitive’s Interrogatory No. 5 (August 8, 2022).

²⁰¹ Plaintiff’s Response to Intuitive’s Interrogatory No. 5 (August 8, 2022).

²⁰² Plaintiff’s Response to Intuitive’s Interrogatory No. 5 (August 8, 2022).

²⁰³ SIS003902-003903.

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As of January 2021, an estimated 10% to 23% of disposed EndoWrists still had active uses remaining.²⁰⁴

Similar to the repair business opportunities, SIS believes there are great opportunities in its recovery business.²⁰⁵ For example, in 2019, Banner Health System estimated it discarded an estimated \$8 million worth of unused lives in EndoWrists.²⁰⁶

VII. Intuitive considered its own instrument refurbishment service but decided against it

Given Intuitive’s knowledge regarding hospitals’ interest in repair services and its desire to preempt third-party repairs, in 2017 and 2018, Intuitive looked at developing an instrument refurbishment service for core instruments (such as EndoWrists) code-named “Project Dragon,” wherein the instruments would be returned to like new condition.²⁰⁷ Project Dragon provides Intuitive’s insight about repairing / refurbishing EndoWrist instruments.

According to a 2017 Project Dragon presentation, Intuitive considered the reprocessed, SUD market to be the closest parallel to its proposed refurbished instrument plan.²⁰⁸ The presentation also stated that the “reprocessed, lap, direct energy market” is the best parallel within that market.²⁰⁹

According to this Project Dragon presentation, the customer value of Project Dragon included: 1) an opportunity for Intuitive’s customers to have improved running costs associated with da Vinci procedures, which it believed would grow or accelerate growth in procedures. As part of this, Intuitive proposed a 20% discount (as opposed to a 30% discount), which it believed would maintain its position as a partner and not force it into a commodity position; 2) Increasing customer confidence in refurbished, low cost instruments, as Intuitive expected third party companies would be offering reprogrammed da Vinci instruments; and 3) Benefitting from reduced environmental and economic overhead associated with da Vinci waste.²¹⁰ This

²⁰⁴ SIS003902-003903.

²⁰⁵ Discussion with Keith Johnson and Greg Posdal.

²⁰⁶ SIS343965-343971 at 969.

²⁰⁷ See, e.g., Intuitive-00103407-00103426 and Intuitive-00104182-00104207 (Morales Dep. Ex. 126).

²⁰⁸ See, e.g., Intuitive-00103407-00103426 at 410 and 413.

²⁰⁹ See, e.g., Intuitive-00103407-00103426 at 413.

²¹⁰ See, e.g., Intuitive-00103407-00103426 at 409 and Intuitive-00104182-00104207 (Morales Dep. Ex. 126) at 185.

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presentation also noted that Intuitive would be challenged to compete if competitors entered the market and offered discounts of approximately 50%.²¹¹

This presentation also stated that reprocessed SUDs represented 10% and were projected to grow to 15% in the next 10 years.²¹² Later Intuitive Project Dragon presentations in July 2017 and April 2018 considered a 20% penetration rate for refurbished sales.²¹³ In August 2019, Intuitive considered penetration rates up to 50%.²¹⁴

I understand Intuitive never went forward with Project Dragon,²¹⁵ in part because it was too expensive.²¹⁶

VIII. Rebotix’s repair program – working with SIS

In the spring / summer of 2019, SIS began working with Rebotix on its EndoWrist repair business.²¹⁷ SIS initially provided the repair business customers while Rebotix provided the Interceptor chip (or “repair chip”) to reset S / Si EndoWrist counters enabling additional EndoWrist uses and the actual repair.²¹⁸

SIS intended to bring the EndoWrist repair work in-house, like it does with its other repair services, while purchasing the Interceptor chip from Rebotix and/or a similar chip from Restore.²¹⁹ In 2019, SIS and Rebotix had a draft agreement, that would have required SIS to

²¹¹ See, e.g., Intuitive-00103407-00103426 at 410 and Intuitive-00104182-00104207 (Morales Dep. Ex. 126) at 186.

²¹² See, e.g., Intuitive-00103407-00103426 at 413.

²¹³ Intuitive-00098370, Intuitive-00098681 and Deposition of Ronald Blair 81-82 (May 24, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)). Intuitive-00092805, Intuitive-00098370; see also, 30(b)(6) Deposition of Nickola Goodson 162-165 (October 27, 2022).

²¹⁴ See, e.g., Intuitive-00581814-00581883 at 858, 868 and 877. One estimate shows 59,700 refurbished Xi instruments out of a total 144,985 Xi instruments forecasted in 2020. The other estimate shows 72,492 refurbished Xi instruments out of a total 144,985 Xi instruments forecasted in 2020. See also, Intuitive-00086011-082 at 054, 064 and 073.

²¹⁵ Deposition of Katie Scoville 11-13 (May 26, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)); Deposition of Ron Bair 67-69 and 144-147 (May 24, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

²¹⁶ Deposition of Margaret Nixon 109-110 (October 7, 2022).

²¹⁷ 30(b)(1) Deposition of Greg Posdal 23-25 (November 1, 2022).

²¹⁸ 30(b)(1) Deposition of Greg Posdal 25 (November 1, 2022).

²¹⁹ 30(b)(1) Deposition of Greg Posdal 25 (November 1, 2022).

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purchase 50 Interceptors for up to \$800 per interceptor.²²⁰ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]⁰

²²⁰ Deposition of Chris Gibson 162-163 (June 22, 2021) and REBOTIX061127-138 at 128-129 (Gibson Dep. Ex. 13) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

²²¹ Deposition of Chris Gibson 163 (June 22, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)). Discussion with Greg Posdal.

²²² 30(b)(1) Deposition of Greg Posdal 41-42 (November 1, 2022).

²²³ 30(b)(1) Deposition of Greg Posdal 41-42 (November 1, 2022).

²²⁴ **Schedule 10.1.** See also, REBOTIX162208-162212 at 212.

²²⁵ Discussion with Greg Posdal. REBOTIX067735-737 (Gibson Dep. Ex. 14)

²²⁶ **Schedule 10.1.**

²²⁷ Deposition of Stan Hamilton 15 (November 4, 2022).

²²⁸ Deposition of Stan Hamilton 11-12 and 42-44 (November 4, 2022).

²²⁹ Deposition of Stan Hamilton 15 (November 4, 2022).

²³⁰ 30(b)(6) Deposition of Glen Papit 101 (June 2, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

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IX. Restore’s repair program – working with SIS

SIS and Restore are partners in SIS’s EndoWrist recovery business for Si and Xi instruments.²³¹ SIS’s EndoWrist recovery business identifies the available lives or uses remaining on an EndoWrist and confirms EndoWrist instrument functionality.²³² SIS essentially is the recovery business sales arm, bringing in recovery business customers, while Restore checks the EndoWrist instruments for remaining lives and checks functionality.²³³ The EndoWrist recovery process involves attaching a reader to an EndoWrist instrument, which reads and notes the number of available lives the instrument has, and the EndoWrist instrument is then returned to its hospital.²³⁴

A. Expected greater than 70% to 80% of market would use repair services

As discussed herein, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

B.

[REDACTED]

[REDACTED]²³⁶

C.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

²³¹ 30(b)(6) Deposition of Greg Posdal 51 (November 1, 2022).

²³² Discussion with Greg Posdal. *See also, e.g.*, SIS010151.

²³³ 30(b)(6) Deposition of Greg Posdal 51 (November 1, 2022). Discussion with Greg Posdal.

²³⁴ 30(b)(6) Deposition of Greg Posdal 51-52 (November 1, 2022).

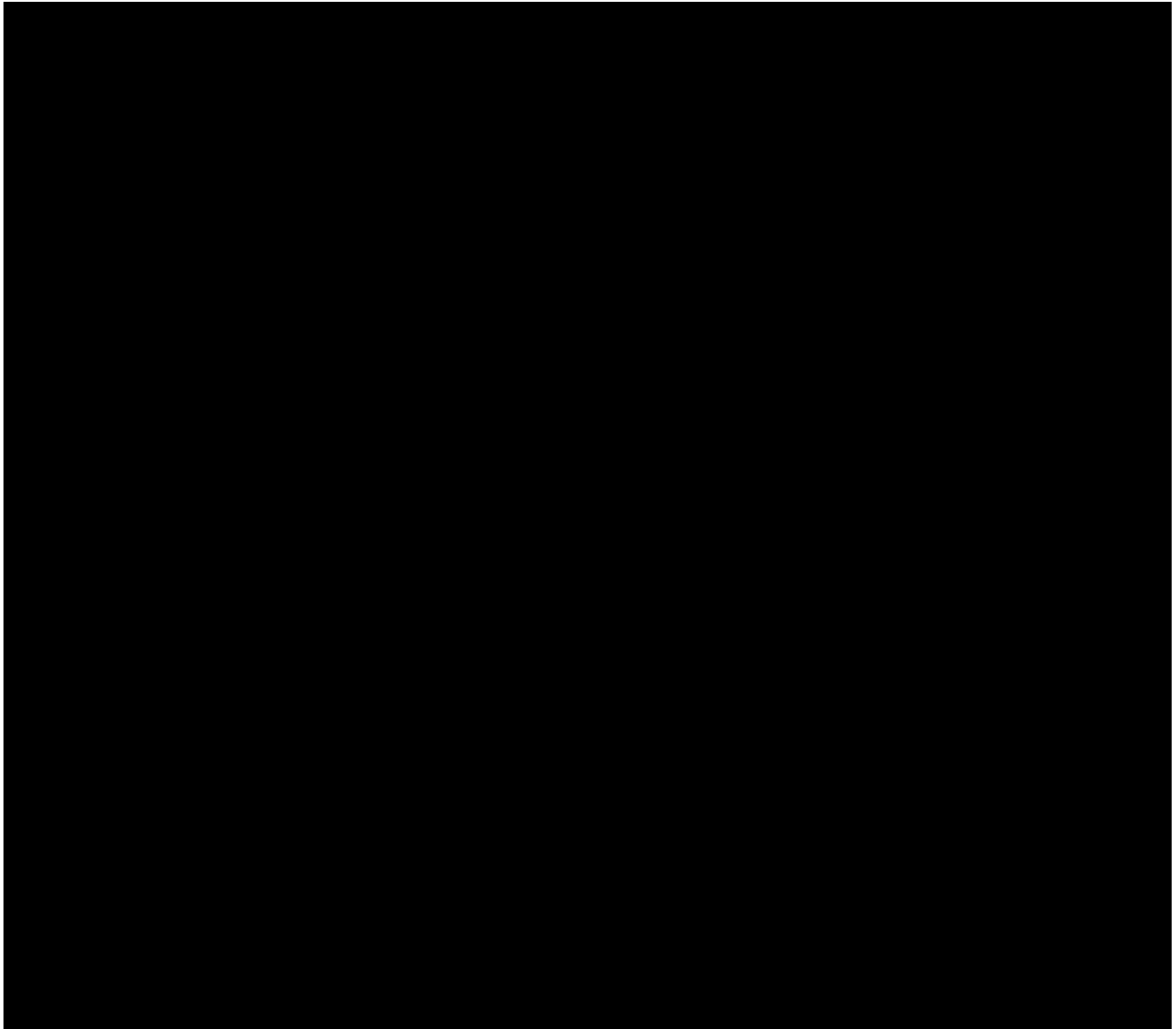
²³⁵ Deposition of Clifton Parker 166-167 (October 25, 2022).

²³⁶ [REDACTED]

[REDACTED]

[REDACTED]

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²³⁷ Deposition of Kevin May 75-76 (November 3, 2022).

²³⁸ Deposition of Clifton Parker 144 (October 25, 2022). Of this amount, approximately \$1.2 million was spent on bypassing the S/Si chip.

²³⁹ Deposition of Clifton Parker 172 (October 25, 2022).

²⁴⁰ Deposition of Clifton Parker 174-175 (October 25, 2022).

²⁴¹ Deposition of Clifton Parker 143-144 (October 25, 2022).

²⁴² Deposition of Kevin May 117-118 (November 3, 2022).

²⁴³ Deposition of Clifton Parker 142 (October 25, 2022).

²⁴⁴ Deposition of Kevin May 75-76 (November 3, 2022).

²⁴⁵ Deposition of Kevin May 40 (November 3, 2022). May Dep. Ex. 155 (Restore-00091199-206 at 199).

²⁴⁶ Deposition of Kevin May 40 (November 3, 2022).

²⁴⁷ Deposition of Kevin May 60-61 (November 3, 2022).

²⁴⁸ Based on discussion with Kurt Humphrey.

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X. GPO’s

GPO’s are entities that help healthcare providers, such as hospitals, nursing homes and home health agencies, realize savings and efficiencies by aggregating purchasing volume and using that leverage to negotiate discounts with manufacturers, distributors and other vendors.²⁴⁹ The three largest U.S. GPO’s are Vizient, Inc., Premier and Health Trust.²⁵⁰

A. Vizient – more than 60% of U.S. acute care providers in 2022

Vizient, Inc. (“Vizient”) is the largest GPO in the U.S., with approximately 449,000 staffed beds.²⁵¹ As of 2019, Vizient served more than 50% of the health care organizations in the U.S.²⁵² As of late November 2022, Vizient serves more than 60% of U.S. acute care hospitals, 97% of academic medical centers and more than 20% of ambulatory care providers.²⁵³ I understand Vizient’s core business is larger hospitals or hospital systems, which tend to have at least average size acute care providers.²⁵⁴

Vizient provides expertise, analytics and advisory services and has a contract portfolio representing more than \$130 billion in annual purchasing volume.²⁵⁵ Vizient's solutions and services improve the delivery of high-value care by aligning cost, quality and market performance.²⁵⁶ Vizient represents between 3,500 and 4,000 hospitals.²⁵⁷

1. September 2016 Vizient – SIS Agreement

In 2016, Vizient Supply LLC and SIS entered into a Supplier Services Agreement for instrument repair that was effective September 1, 2016 (the “September 2016 Vizient

²⁴⁹ <https://supplychainassociation.org/about-us/what-is-gpo/>.

²⁵⁰ Discussion with Keith Johnson and Greg Posdal. Intuitive-00807510-00807557 at 549.

²⁵¹ See, e.g., <https://newsroom.vizientinc.com/en-US/releases/vizient-announces-11-member-agreements-for-q1-2022> and <https://www.definitivehc.com/blog/top-10-gpos-by-staffed-beds>.

²⁵² <https://web.archive.org/web/20191108191050/https://www.vizientinc.com/what-we-do>.

²⁵³ See, e.g., <https://www.vizientinc.com>.

²⁵⁴ Discussions with Keith Johnson and Jean Sargent.

²⁵⁵ See, e.g., <https://newsroom.vizientinc.com/en-US/releases/vizient-announces-11-member-agreements-for-q1-2022>.

²⁵⁶ See, e.g., <https://newsroom.vizientinc.com/en-US/releases/vizient-announces-11-member-agreements-for-q1-2022>.

²⁵⁷ Discussion with Keith Johnson. In his deposition, Keith Johnson testified he thought Vizient represented between 2,500 and 3,000 hospitals, although he qualified this statement. 30(b)(6) Deposition of Keith Johnson 53 (October 27, 2022).

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Agreement”).²⁵⁸ According to this Agreement, Vizient provided purchasing opportunities to individual entities or groups of entities under various contracts, each of which Vizient referred to as a “Member” or, collectively, as “Members.”²⁵⁹ I understand these “Members” represent the hospitals Vizient represents, as noted above. Under this Agreement, SIS agreed to offer certain services defined in Exhibits A, A.1 and B for sale and license to end-use customers, such as these “Members.”²⁶⁰

This Agreement had an initial 3-year term effective September 1, 2016 and would renew automatically for two additional one-year terms unless Vizient gave adequate notice.²⁶¹ SIS agreed to pay Vizient a GPO administrative fee of 4% of all net sales (as defined in the Agreement) for the services it sold to Members.²⁶²

2. September 2019 Vizient – SIS Agreement Amendment specific to EndoWrist repairs

In 2019, Vizient Supply, LLC and SIS entered into an Amendment to their September 1, 2016 Agreement (“September 2019 Vizient Amended Agreement”) that was effective September 15, 2019.²⁶³ This Amended Agreement addressed SIS’s intention to repair EndoWrist products, and included an Exhibit A, a da Vinci EndoWrist Pricing Schedule, for 38 EndoWrist products.²⁶⁴ The timing of this Amended Agreement also coincided with Vizient’s interest in SIS’s EndoWrist repair business and the meetings it helped set up with its members.²⁶⁵

The EndoWrist pricing ranged from \$1,100 to \$1,700.²⁶⁶ I understand SIS would have paid Vizient a GPO administrative fee of 4% of net sales on EndoWrist sales made under this Amendment, consistent with the September 2016 Agreement described above.²⁶⁷

²⁵⁸ SIS330591-330634.

²⁵⁹ SIS330591-330634 at 592.

²⁶⁰ SIS330591-330634 at 592. The prices for the various services SIS agreed to offer were all on Exhibit A (SIS330591-330634 at 608-623).

²⁶¹ SIS330591-330634 at 594.

²⁶² SIS330591-330634 at 597.

²⁶³ SIS0000047-0000049.

²⁶⁴ SIS0000047-0000049. Discussion with Keith Johnson.

²⁶⁵ Discussion with Keith Johnson.

²⁶⁶ SIS0000047-0000049.

²⁶⁷ Discussion with Keith Johnson.

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3. August 2020 Vizient – SIS Agreement - specific to EndoWrist recovery (not repairs)

In 2020, Vizient Supply, LLC and SIS entered into a Supplier Services Agreement for third party instrument and scope repair that was effective August 1, 2020.²⁶⁸ I understand this Amended Agreement had no effect on any EndoWrist repairs.²⁶⁹ I understand this agreement effectively was a renewal of the September 2016 Agreement described above.²⁷⁰ I understand this Amended Agreement was specific to EndoWrist recovery, and not repairs.²⁷¹

According to this Agreement, Vizient provided purchasing opportunities to individual entities or groups of entities under various contracts, each of which Vizient referred to as a “Member” or, collectively, as “Members.”²⁷² I understand these “Members” represent the hospitals Vizient represents, as noted above. Under this Agreement, SIS agreed to offer certain services defined in Exhibits A, A.1 and B for sale and license to end-use customers, such as these “Members.”²⁷³

This Agreement had an initial 3-year term effective August 1, 2020 and would renew automatically for two additional one-year terms unless Vizient gave adequate notice.²⁷⁴ SIS agreed to pay Vizient a GPO administrative fee of 4% of all net sales (as defined in the Agreement) for the services it sold to Members, with the exception of net sales to new customers within the first 12 months of any new customers end user agreement with SIS, for which SIS agreed to pay Vizient a 5% GPO administrative fee.²⁷⁵

²⁶⁸ SIS169233-169280.

²⁶⁹ Discussion with Keith Johnson.

²⁷⁰ Discussion with Keith Johnson.

²⁷¹ Discussion with Keith Johnson.

²⁷² SIS169233-169280 at 234.

²⁷³ SIS169233-169280 at 234. The prices for the various services SIS agreed to offer were all on Exhibit A (SIS169233-169280 at 250-264).

²⁷⁴ SIS169233-169280 at 236.

²⁷⁵ SIS169233-169280 at 238-239. These “new customers” were defined as customers who would sign an end user agreement after August 1, 2020, the Agreement’s effective date. After 12 months, SIS would pay a 4% GPO administrative fee on net sales to these “new customers.”

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4. Subsequent Vizient – SIS Agreement Amendments – specific to EndoWrist recovery (not repairs)

In 2020, Vizient Supply, LLC and SIS entered into an Amendment to their August 1, 2020 Agreement that was effective November 15, 2020.²⁷⁶ This Amended Agreement reflected SIS’s offering a Flat Capitated Program and a Capitated Risk Share Program for certain services shown on Exhibit A to this Amended Agreement.²⁷⁷ I understand this Amended Agreement was specific to EndoWrist recovery, and not repairs.²⁷⁸

In 2021, Vizient Supply, LLC and SIS entered into an Amendment to their August 1, 2020 Agreement that was effective June 1, 2021.²⁷⁹ This Agreement amended Exhibit A (Services Description and Pricing) to reflect SIS’s Inspection and Recovery Program for Si EndoWrists.²⁸⁰ I understand this Amended Agreement was specific to EndoWrist recovery, and not repairs.²⁸¹

In 2021, Vizient Supply, LLC and SIS entered into an Amendment to their August 1, 2020 Agreement that was effective October 8, 2021.²⁸² This Agreement amended Exhibit A (Services Description and Pricing) to reflect SIS’s Inspection and Recovery Program for all EndoWrists (such as X/Xi), not just Si EndoWrists, as the June 1, 2021 Amendment described above did.²⁸³ I understand this Amended Agreement was specific to EndoWrist recovery, and not repairs.²⁸⁴

B. Premier – 2nd largest GPO in the U.S.

Premier, Inc. (“Premier”) is a healthcare improvement company located in Charlotte, North Carolina.²⁸⁵ Premier has an alliance of approximately 4,400 U.S. hospitals and health

²⁷⁶ SIS116933-116940.

²⁷⁷ SIS116933-116940.

²⁷⁸ Discussion with Keith Johnson.

²⁷⁹ SIS045231-045232.

²⁸⁰ SIS045231-045232.

²⁸¹ Discussion with Keith Johnson.

²⁸² SIS075744-075746.

²⁸³ SIS075744-075746. Discussion with Keith Johnson.

²⁸⁴ Discussion with Keith Johnson.

²⁸⁵ <https://premierinc.com/about> .

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systems and more than 250,000 other providers and organizations.²⁸⁶ Premier is the second largest GPO in the U.S., with approximately 342,000 staffed beds.²⁸⁷

Yankee Alliance is a Premier Certified Sponsor,²⁸⁸ which I understand means it’s a regional affiliate of Premier.²⁸⁹ In 2012, SIS and Yankee Alliance signed an Agreement that was effective from November 1, 2012 through September 30, 2017.²⁹⁰ SIS agreed to pay Yankee Alliance an administrative fee of 3% purchases made by participants (as defined in the Agreement).²⁹¹ I understand this Agreement was extended through January 31, 2022.²⁹² SIS and Yankee Alliance signed another Agreement that is effective from February 1, 2022 through January 1, 2025.²⁹³

C. HealthTrust

HealthTrust is located in Nashville, Tennessee, and has more than 1,600 hospital partners.²⁹⁴ HealthTrust is the third biggest GPO in the U.S., with approximately 174,000 staffed beds.²⁹⁵ SIS does not have a relationship with HealthTrust.²⁹⁶

XI. Robotic Surgery Industry

I understand robotic surgeries involve machines guided by doctors to perform surgical procedures.²⁹⁷ Robotic surgeries relieve surgeons of some repetitive labor and require tremendous skills by surgeons performing these surgeries.²⁹⁸ Robotic surgeries are used primarily to allow operations to take place through minimally invasive incisions, eliminate

²⁸⁶ <https://premierinc.com/about>.

²⁸⁷ <https://www.definitivehc.com/blog/top-10-gpos-by-staffed-beds>. Discussion with Keith Johnson.

²⁸⁸ <https://www.yankeealliance.com/content/premier-certified-sponsor-affiliates>.

²⁸⁹ Discussion with Keith Johnson.

²⁹⁰ SIS319315-319322.

²⁹¹ SIS319315-319322 at 316.

²⁹² SIS143365-143366. Discussion with Keith Johnson.

²⁹³ SIS163317-163341. While Greg Posdal signed this Agreement, this copy has some edits on it.

²⁹⁴ <https://healthtrustpg.com/about-healthtrust/>.

²⁹⁵ <https://www.definitivehc.com/blog/top-10-gpos-by-staffed-beds>.

²⁹⁶ Discussion with Keith Johnson.

²⁹⁷ Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

²⁹⁸ Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

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unwanted motion, improve surgical dexterity and allow remote surgery.²⁹⁹ The first robotic surgery was performed in 1985.³⁰⁰

Laparoscopic surgery, in which a thin lighted optical instrument, similar to a small telescope, is used to examine abdominal and thoracic (chest) cavities became more popular in the 1980s and 1990s.³⁰¹ With the use of laparoscopes, surgeons found they could perform operations through small incisions and decrease patients’ recovery time and hospital stays.³⁰² The approach represented a type of minimally invasive surgery.³⁰³

By the late 1990s, three systems designed for minimally invasive surgeries had been tested: Intuitive’s da Vinci surgical system, and the AESOP and Zeus Robotic Surgical systems, both developed by Computer Motion, Inc.³⁰⁴ Computer Motion, Inc. was subsequently purchased by Intuitive Surgical, and the da Vinci surgical system became the most widely used robotic surgical system worldwide.³⁰⁵

As of June 2019, the medical robotics market for invasive procedures was expected to increase from \$4B in 2019 to \$17B worldwide by 2030 with procedure penetration increasing from 2% to 12%.³⁰⁶ In 2018, there were an estimated 13.1 million robotic eligible procedures.³⁰⁷ The three main players for this market were listed as Intuitive, Johnson and Johnson and Medtronic.³⁰⁸ As of June 2019, Intuitive had a more than 3,000 unit head start compared to its competition, which was expected to increase in the coming years.³⁰⁹

XII. Surgical Instruments Industry

I understand surgical instruments can generally be categorized as single-use devices (“SUDs” or “disposable devices”) and reusable instruments.³¹⁰ Disposable devices are intended

²⁹⁹ Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

³⁰⁰ Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

³⁰¹ Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

³⁰² Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

³⁰³ Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

³⁰⁴ Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

³⁰⁵ Moore, Eric J., “Robotic Surgery,” Britannica (<https://www.britannica.com/science/robotic-surgery>).

³⁰⁶ Intuitive-00808372-00808551 at 372.

³⁰⁷ Intuitive-00808372-00808551 at 390.

³⁰⁸ Intuitive-00808372-00808551 at 372.

³⁰⁹ Intuitive-00808372-00808551 at 414.

³¹⁰ See, e.g., <https://bmpmedical.com/reasons-to-switch-to-single-use-medical-devices-and-disposable-medical-supplies/>.

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for use on one patient during a single procedure.³¹¹ Reusable devices are devices that can be re-processed after use (e.g., cleaned and disinfected or sterilized) and reused for multiple patients and / or procedures.³¹²

To avoid any risk of infection by a contaminated device, reusable devices undergo "reprocessing," a detailed, multistep process to clean and then disinfect or sterilize them.³¹³ When instructions for reprocessing are completely and correctly followed after each use of a device, reprocessing results in a device that can be safely used more than once in the same patient, or in more than one patient.³¹⁴ Adequate reprocessing of reusable medical devices is vital to protecting patient safety.³¹⁵

Some examples of reusable devices include surgical instruments (such as clamps and forceps), endoscopes (such as colonoscopes, used to visualize areas inside the body), endoscope accessories (such as graspers and scissors) and laparoscopic surgery accessories (such as arthroscopic shavers).³¹⁶

When reusable instruments are no longer usable, I understand they can be disposed of, remanufactured, refurbished and / or repaired. The FDA defines these activities as follows:³¹⁷

- Remanufacture: Process, condition, renovate, repackaging, restore, or any other act done to a finished device that significantly changes the finished devices performance or safety specifications, or intended use.
- Recondition / Refurbish / Rebuild: Restores a medical device to the OEM’s original specifications or to be “like new.” The device may be brought to current specifications if the change(s) made to the device do not significantly change the finished device’s performance or safety specifications, or intended use. These activities include repair of components, installation of OEM provided updates and upgrades, and replacement of worn parts.

³¹¹ <https://www.cdc.gov/oralhealth/infectioncontrol/faqs/single-use-devices.html> and <https://www.fda.gov/medical-devices/products-and-medical-procedures/reprocessing-reusable-medical-devices>.

³¹² <https://www.fda.gov/medical-devices/reprocessing-reusable-medical-devices/what-are-reusable-medical-devices> and <https://www.fda.gov/medical-devices/products-and-medical-procedures/reprocessing-reusable-medical-devices>.

³¹³ <https://www.fda.gov/medical-devices/products-and-medical-procedures/reprocessing-reusable-medical-devices>.

³¹⁴ <https://www.fda.gov/medical-devices/products-and-medical-procedures/reprocessing-reusable-medical-devices>.

³¹⁵ <https://www.fda.gov/medical-devices/products-and-medical-procedures/reprocessing-reusable-medical-devices>.

³¹⁶ <https://www.fda.gov/medical-devices/reprocessing-reusable-medical-devices/what-are-reusable-medical-devices>.

³¹⁷ <https://www.fda.gov/media/150141/download> at 4-5.

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- Repair: A type of servicing that returns a component to original specifications, including replacing non-working components or parts outside of routine or periodic upkeep for the current owner of the device.

I understand the service SIS provided would be categorized as a repair since it returned a component (the EndoWrist instruments) to their original specifications, did not significantly change the finished device’s performance, safety specifications or intended use, and returned the device to the current owner.³¹⁸

XIII. Anticompetitive Conduct Damages

I understand the primary objective of antitrust laws is to promote competition by prohibiting actions that restrain or are likely to restrain competition. As noted above, Intuitive has been accused of the following four antitrust counts: 1) Tying; 2) Exclusive Dealing; 3) Monopolization; 4) Attempted Monopolization.³¹⁹ Intuitive has also been accused of Unfair Trade Practices in violation of the Lanham Act.³²⁰

Internal Intuitive e-mails from May 2018 addressed how the aftermarket “reprogramming” activity was picking up in the U.S. and Intuitive detected its first United States usage.³²¹ At this time, Intuitive considered whether it should investigate software changes to the Xi in response to this market activity.³²² Intuitive continued to monitor this activity through 2019.³²³ On September 9, 2019, an Intuitive email chain included a forwarded e-mail which noted that Kaiser Permanente and Legacy Health System were using SIS to “refurbish” EndoWrist products, at approximately 40% cost savings.³²⁴ In an earlier e-mail in the chain, a Vizient Enterprise Client Manager indicated that “Surgical Instrument Service Company (SIS) is now the only supplier providing refurbishment to Intuitive Surgical’s da Vinci EndoWrist.”³²⁵

³¹⁸ Discussion with Jean Sargent.

³¹⁹ Compl. ¶¶ 111-121.

³²⁰ Compl. ¶¶ 122-126.

³²¹ Intuitive-0104535-0104537 at 537.

³²² Intuitive-0104535-0104537.

³²³ See, e.g., Intuitive-00110242-00110243; Intuitive-00110255-00110258; Intuitive-00241336-00241370 at 343 and 349-352; Intuitive-00338790-00338805; Intuitive-01024426-01024427; Intuitive-00049128-0049132; Deposition of Dan Jones 74-77 (November 10, 2022); Deposition of Margaret Nixon 143-144 (October 7, 2022).

³²⁴ Intuitive-00110255-00110258 at 258.

³²⁵ Intuitive-00110255-00110258 at 258.

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When addressing antitrust conduct, I understand defining the relevant market or markets can help determine where the competition occurs and in which market the market power is exercised. I understand relevant markets generally include a group of products or services and a geographic area.³²⁶ For purposes of my report, I understand the relevant product markets are the markets for minimally invasive soft tissue surgical robots and the market for repairs of EndoWrist instruments, and I understand the relevant geographic market is the U.S. I understand SIS and Intuitive have competed for sales and / or repairs of EndoWrist instruments in the U.S. market, and SIS intended to still be competing in this market, but for Intuitive’s anticompetitive conduct.

XIV. SIS’s Lost Profits Damages

Damages are typically intended to put the Plaintiff (here, SIS) in the same financial position it would have been in but for the Alleged Wrongdoings.³²⁷ Lost profits are a common damages form a business can recover when a legal wrong has caused it to lose profits.³²⁸

A. The ‘but for’ analysis - difference between ‘would-have-been’ and ‘actual’

A proper lost profits damages analysis determines the amount necessary to place the plaintiff in a position it would have otherwise been in had the wrongdoing not occurred.³²⁹ Here, the analysis determines the amount necessary to place SIS in a position it would have otherwise been in had the Alleged Wrongdoing not occurred.

A lost profit damages analysis is often referred to as a ‘*but for*’ analysis. The ‘but for’ analysis compares the ‘but for’ or ‘would-have-been’ profits to the ‘actual’ profits. The difference represents lost profits damages. A lost profits analysis generally can be described as:³³⁰

Net lost profits (herein referred to as “lost profits”) are generally determined by estimating the lost revenues (gross and net) that would have been earned “but for” the alleged acts...reduced by

³²⁶ See, e.g., <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010> at 8-15.

³²⁷ The Comprehensive Guide to Economic Damages: Volume One at 239 (2020 6th ed., BVR Publications).

³²⁸ *Id.* at 225.

³²⁹ *Id.* at 239.

³³⁰ The Comprehensive Guide to Economic Damages: Volume One at 239 (2020 6th ed., BVR Publications). See also, Association of International Certified Public Accountants (AICPA) Forensic & Valuation Services Practice Aid – Calculating Lost Profits at 8 (2018).

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avoided costs (or incremental costs) that did not occur because of the subject lost revenues.

From the predetermined “but-for” amounts of lost revenues less associated costs, the actual/projected profits are deducted to determine the resulting economic damages.

Inherent within this analysis is the question of mitigation, the plaintiff’s obligation to limit its damages.³³¹ Mitigation considers what the plaintiff could have reasonably done to overcome or minimize its damages.³³²

I understand SIS has mitigated its lost profits to the best of its ability. Here, SIS has mitigated its damages as it has continued to sell its repair services.³³³

B. The Alleged Wrongdoings caused SIS’s lost revenue and profits

In order to properly determine SIS’s lost profits from the Alleged Wrongdoings, this analysis considers what would have otherwise happened in the event the Alleged Wrongdoings had not happened. As noted above, this is the standard methodology used to determine lost profit damages and is often referred to as a ‘but for’ analysis. This analysis considers SIS’s lost profits damages ‘but for’ the Alleged Wrongdoings.

In this matter, but for the Alleged Wrongdoings, SIS would have made additional EndoWrist repair sales and profits.

C. Demand – monumental interest

Demand has existed for SIS’s EndoWrist repair services. Keith Johnson, SIS’s Executive Vice President of Sales and Clinical Programs, testified “the interest in saving and reducing costs on robotic surgery in the industry is something I’ve never seen before in my 25 years of being in the surgical business.”³³⁴ He stated there is “monumental” interest from hospitals in its X/Xi

³³¹ The Comprehensive Guide to Economics Damages: Volume One at 233 (2020 6th ed., BVR Publications). *See also*, Association of International Certified Public Accountants (AICPA) Forensic & Valuation Services Practice Aid – Calculating Lost Profits at 47 (2018). *See also*, American Institute of Certified Public Accountants (AICPA) Practice 06-4 at 45 (2006).

³³² The Comprehensive Guide to Economics Damages: Volume One at 233 (2020 6th ed., BVR Publications). *See also*, Association of International Certified Public Accountants (AICPA) Forensic & Valuation Services Practice Aid – Calculating Lost Profits at 47 (2018). *See also*, American Institute of Certified Public Accountants (AICPA) Practice 06-4 at 45 (2006).

³³³ Discussions with Keith Johnson and Greg Posdal. *See also*, SIS003653-3670.

³³⁴ 30(b)(6) Deposition of Keith Johnson 44 (October 27, 2022).

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repair business.³³⁵ For example, Banner Health System, one of the largest nonprofit health systems, with over 20 hospitals, and a member of the Premier GPO, wanted to proceed with the EndoWrist repair program since they knew it would be a huge cost savings.³³⁶

As addressed above, Mr. Johnson has presented the EndoWrist repair program to three of Vizient’s four regions.³³⁷ He has had meetings with what probably represents over a thousand hospitals, and listed at least the following hospitals and hospital systems he has spoken to about SIS’s Xi program: Legacy Health, Providence Health System, Sutter Health, Kaiser Permanente, Memorial Care, the UC California system, Banner Health System, Honor Health, Baylor Scott & White, University health systems across the country from Michigan to Duke to North Carolina, Mayo Clinic, Cleveland Clinic, Advocate Aurora, Lahey Health System, Boston’s Children’s Medical Center, Piedmont Health System and John Hopkins.³³⁸

There was “real excitement” among most SIS customers (both hospitals and hospital systems) who felt Intuitive was taking advantage of them by the preset number of EndoWrist uses, the EndoWrist costs and by Intuitive’s threats to shut down their equipment.³³⁹ These customers included at least Banner Health, Piedmont Health, Kaiser Health, Legacy Health and Advocate Aurora, among others, along with Vizient, the U.S.’s largest GPO.³⁴⁰

Keith Johnson testified:³⁴¹

...Every person I called, every organization I called, took a meeting. We sat down with all of them. They were – they all wanted it.

The reason that we felt great about scalability is we didn’t have any competition, we were it. It was a program everybody wanted, there – we weren’t fighting the OEM on the repairs, we weren’t

³³⁵ 30(b)(6) Deposition of Keith Johnson 44 (October 27, 2022). Discussion with Keith Johnson.

³³⁶ <https://investors.premierinc.com/news/press-release-details/2016/Premier-Inc-and-Banner-Health-Expand-Partnership/default.aspx>; 30(b)(1) Deposition of Greg Posdal 43-44 (October 27, 2022).

³³⁷ 30(b)(6) Deposition of Keith Johnson 45 (October 27, 2022). *See also*, SIS343965-343971 at 970, where the four Vizient regions are identified as West, Central, Southeast and Northeast Zones. Based on discussions with Keith Johnson, I understand he misspoke in his deposition, as he never gave a presentation to Vizient’s Northeast Zone.

³³⁸ 30(b)(6) Deposition of Keith Johnson 44-45 (October 27, 2022).

³³⁹ 30(b)(1) Deposition of Greg Posdal 76-77 (November 1, 2022).

³⁴⁰ 30(b)(1) Deposition of Greg Posdal 78-79 (November 1, 2022).

³⁴¹ Deposition of Keith Johnson 20 (October 27, 2022).

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fighting other companies, it was us, so the ability to scale was – was huge.

He also testified the potential revenue from the S/Si EndoWrist business was somewhere in the range of \$250 million to \$350 million per year, based on:³⁴²

...conversations I had with key customers to understand the number of robotics they had, the number of robots they had, the dollars spent on devices and instrumentation for those robots, and then looking at our global customer list through Vizient and the opportunities we would have.

Although it lacks SIS’s customer relationships, Restore similarly recognized the demand for repair services. [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

In January 2020, a Deutsche Bank Research article was sent in an email to Philip Kim of Intuitive, which included the following about the demand for using repaired da Vinci instruments:³⁴⁶

Our extensive due diligence spanning several months – including conversations with several da Vinci surgeons and supply chain executives. . . yielded confirmation that a growing number of hospital customers, including world-renowned academic centers and even large hospital systems, have begun or are in late stage deliberations/discussions to potentially soon begin using repaired da Vinci Instruments supplied by third-parties. Meaningful operating cost savings opportunity is the key driver compelling hospitals to consider using these repaired da Vinci instruments.

Overall, it is clear there was demand for SIS’s EndoWrist repair services.

³⁴² Deposition of Keith Johnson 17 (October 27, 2022).

³⁴³ Deposition of Kevin May 111 (November 3, 2022).

³⁴⁴ Deposition of Kevin May 99-101 (November 3, 2022).

³⁴⁵ Deposition of Clifton Parker 166-167 (October 25, 2022).

³⁴⁶ Intuitive-00555864-0055866 at 865.

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D. Capacity and capability to perform EndoWrist repairs

In order for SIS to make additional sales and profits, SIS would have had to have the capacity and capability to make EndoWrist repair sales. According to Kevin May, Restore’s Operations Officer, based on his 33 years of industry experience, the EndoWrist is the “simplest device we’ve ever serviced or repaired.”³⁴⁷

SIS routinely repairs similar and more complex instruments. As noted above, while Rebotix initially provided the repair services as well as the chip, SIS planned to purchase the chip and repair the EndoWrists in-house.

Intuitive projected refurbishment time less than one hour per instrument.³⁴⁸ Similarly, SIS believes one trained employee could complete 20 to 25 repairs per 8-hour shift, meaning it would take approximately 19 minutes to 24 minutes to do one repair.³⁴⁹ SIS believes training technicians would take minimal time.³⁵⁰

Assuming it takes 30 minutes to do 1 repair (which is longer than Greg Posdal thinks it would take), and applied to the approximate 31,000 lost repair unit sales in 2021 under Scenario 1 below, suggests a required 15,500 repair hours, or about 8 repair technicians at 2,000 hours per year.³⁵¹ SIS planned to hire the necessary personnel. SIS also has had plenty of repair space available in its Glendale Heights, Illinois facility.³⁵²

Similarly, I understand Rebotix and Restore have had necessary capacity in the event either or both continued providing the repair services, as representatives from both Rebotix and Restore testified the ramp up period would not be an issue.³⁵³ I further understand neither Keith Johnson nor Greg Posdal ever questioned Rebotix’s or Restore’s ability to perform any repairs.³⁵⁴

In addition, SIS would have needed less than approximately 50,000 chips per year, at most, to make the repairs quantified in all of my scenarios. I understand this would not have

³⁴⁷ Deposition of Kevin May 114-115 (November 3, 2022).

³⁴⁸ Per 30(b)(6) Deposition of Colin Morales (November 1, 2022) at Ex. 143 (Intuitive 00626597-626616 at 626612), manufacturing labor is shown as \$33.80 and the labor rate used to calculate manufacturing labor is \$39 per hour. $\$33.80 / \$39.00 = \text{approximately } 86\% * 60 \text{ minutes} = \text{approximately } 52 \text{ minutes}$.

³⁴⁹ Discussion with Greg Posdal.

³⁵⁰ 30(b)(1) Deposition of Greg Posdal 65-66 (November 1, 2022).

³⁵¹ $31,000 \text{ repairs per year} / 2 \text{ repairs per hour} = 15,500 \text{ repair hours}$. $15,500 \text{ repair hours} / 2,000 \text{ hours per year} = 7.75$.

³⁵² Discussion with Greg Posdal.

³⁵³ Deposition of Clifton Parker 149-150, 183-184 (October 25, 2022); Deposition of Kevin May 104-106 (November 3, 2022); Deposition of Stan Hamilton 19 (November 4, 2022).

³⁵⁴ Discussions with Greg Posdal and Keith Johnson.

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been a problem, especially in comparison to the much larger quantity of chips Intuitive buys every year for its EndoWrists.³⁵⁵

E. Scenario 1 – Illegal Encryption lost profits damages

Scenario 1 assumes X/Xi encryption is illegal. It also assumes SIS’s capability to repair S/Si EndoWrists would have similarly applied to X/Xi EndoWrists. I understand SIS would have continued working with Rebotix or worked with Restore, or potentially with both companies. As noted above, I understand the X/Xi EndoWrists were essentially the same / similar as S/Si EndoWrists and the repairs would be consistent. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In order to estimate SIS’s lost profits damages ‘but for’ the Alleged Wrongdoing, I analyze and estimate the following categories:

- Lost EndoWrist repair units
- Lost revenue
- Incremental costs

I first determine SIS’s annual lost EndoWrist repair units. Those units represent the number of EndoWrist repairs SIS would have reasonably sold to customers through 2025. I estimate lost SIS revenue on those lost EndoWrist repair units based on SIS’s pricing. From those lost revenues, I subtract SIS’s incremental costs in order to determine estimated lost profits.

1. Lost EndoWrist repair units

SIS’s lost EndoWrist repair units are the difference between (1) the units they would have repaired (the ‘Would-Have-Been’ or ‘But For’ EndoWrist repair units) without the Alleged Wrongdoings and (2) those ‘Would-Have-Been’ EndoWrist units they will repair (or Actual EndoWrist repair units) regardless of the Alleged Wrongdoings.

³⁵⁵ Discussions with Greg Posdal and Keith Johnson.

³⁵⁶ Deposition of Kevin May 114-115 (November 3, 2022).

³⁵⁷ Deposition of Kevin May 114 (November 3, 2022).

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a) ‘Would-Have-Been’ EndoWrist repair units – through 2025

I estimate SIS’s ‘Would-Have-Been’ EndoWrists repair units starting with Intuitive’s annual EndoWrist unit sales data and account for various factors as addressed below. The analysis starts January 1, 2020, just after the Alleged Wrongdoings began. The analysis assumes trial is approximately December 2023 / January 2024. In the event SIS prevails, it would then actually begin selling EndoWrist repairs again in January 2024. As addressed below, the ramp up process would take some time, and by the end of 2025 (i.e., two years), SIS would get to a position it would have otherwise been.

Table 5 summarizes the analysis, starting with Intuitive’s annual EndoWrist instruments potentially repairable by SIS and the steps to estimate SIS’s lost EndoWrist repair units from January 1, 2020 through 2025.

Table 5: ‘Would-Have-Been’ EndoWrist repair units³⁵⁸

	Scenario 1		Scenario 2	
EndoWrist instruments potentially repairable by SIS - units	2,418,163		1,771,630	to 2,118,209
Expired EndoWrist instrument - units	1,450,896		1,062,977	to 1,270,924
SIS market share units	797,993		584,637	to 699,008
SIS converted units	470,187		303,952	to 391,199
SIS collected units	329,132		212,766	to 273,840
Would-have-been Lost EndoWrist repair units	236,975		153,191	to 197,164
Market penetration (% of total units)	10%		9%	to 9%

(i) EndoWrist instruments potentially repairable by SIS – unit sales

SIS intended to repair most Intuitive EndoWrist instruments (i.e., the instruments potentially repairable by SIS). Those instruments comprise 38 different S/Si EndoWrist instruments.³⁵⁹ I have included those 38 S/Si instruments potentially repairable by SIS in my analysis. I assume SIS had the capability to provide similar X/Xi EndoWrist instrument repair services to similar X/Xi instruments.

³⁵⁸ Schedules 2.2, 4.2 and 4.5.

³⁵⁹ Schedule 12.0.

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I have identified the U.S. sales for those 38 S/Si and corresponding X/Xi U.S. instruments, by EndoWrist instrument (and instrument number) using Intuitive’s instrument and accessory sales data summarize on **Schedules 13.0 to 13.2**.

The analysis tabulates the data based on the following steps:

- S/Si instruments were identified by instrument number using a SIS price sheet that was part of its September 2019 Vizient Amended Agreement.³⁶⁰
- X/Xi instruments were identified based on similar S/Si instrument numbers and descriptions, along with Intuitive product catalogs.³⁶¹
- U.S. sales were identified using the “Comp Code” data field.
- Net sales were identified using the “Net Sales” data field.
- Sales quantities were identified using the “Sales Qty” data field.

I have summarized the EndoWrist unit data by product type, da Vinci Surgical System and year on **Schedules 13.1 to 13.2**.

To project future Intuitive EndoWrist instrument sales through 2025, I first estimate the percentage breakdown of EndoWrist instrument sales by system, based on Intuitive’s historical sales data.³⁶² I then use Intuitive’s expected annual growth rate for surgical procedures in the U.S. to estimate future EndoWrist instrument sales by system.³⁶³

In order to adjust the EndoWrist instruments potentially repairable by SIS to those instruments SIS reasonably would have (or will) repair but for the Alleged Wrongdoings, I account for numerous factors addressed below.

(ii) Expiration rate of new sales units – 60%

The first factor I account for is the likelihood that not all of the EndoWrists instruments sold and potentially repairable by SIS would ultimately expire. Some of the potentially repairable units above may not expire, or may expire in a later time period.

I apply a 60% expired EndoWrist rate to the annual potentially repairable instrument units based on Intuitive’s own estimates.

³⁶⁰ SIS000047-000049.

³⁶¹ **Schedule 12.1.**

³⁶² **Schedule 6.0.**

³⁶³ Intuitive-01261766.

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I account for this factor based upon the previously explained August 2017 Intuitive analysis projecting 2018 through 2021 annual expirations of the X/Xi ‘Top 5’ EndoWrist instruments.³⁶⁴ Those projected ‘Top 5’ 2018 and 2019 expired units represented 60% of the actual 2018 and 2019 unit sales for those same EndoWrist instruments.³⁶⁵ The projected 2020 and 2021 expired units represented higher percentages of the subsequent actual 2020 and 2021 unit sales. The 2020 and 2021 projections, however, would not have accounted for COVID-19 effects.

I note the 60% expired EndoWrist factor rate was projected in 2017, when X/Xi units were growing annually.³⁶⁶ The expired EndoWrist rate would likely be higher for the S/Si units, which were declining year to year, or for periods when annual units were more stable. If I applied a higher expiration percentage, the number of expired EndoWrist units would be higher.

(iii) Market share rate based on Vizient – 55%

The next factor I account for is Vizient’s market share within the market EndoWrists are sold. I apply a 55% market share rate.

SIS had an agreement in place with Vizient for EndoWrist repairs. Vizient entering into contracts with healthcare providers, such as SIS, delivers significant benefits to its members.³⁶⁷ At a minimum, it simplifies the contracting process for its members.³⁶⁸

Vizient provided SIS access to its members.³⁶⁹ In return, Vizient would receive a 4% administrative fee for SIS repair services.³⁷⁰ Vizient would have promoted SIS repair services to all of its acute care providers with EndoWrists.³⁷¹

³⁶⁴ 30(b)(6) Deposition of Colin Morales (November 1, 2022) Ex. 141 at page 1.

³⁶⁵ **Schedule 7.0.** I also note the ‘Top 5’ EndoWrist instrument numbers comprise a large portion of core EndoWrist instrument unit sales, approximately 70% (73,469 expired ‘Top 5’ / 104,469 expired core) in 2018 and approximately 70% (100,376 expired ‘Top 5’ / 143,395 expired core) in 2019.

³⁶⁶ **Schedule 7.0.**

³⁶⁷ Discussion with Jean Sargent, who is familiar with Vizient and GPO’s.

³⁶⁸ Discussion with Jean Sargent.

³⁶⁹ Discussion with Keith Johnson and Jean Sargent.

³⁷⁰ Discussion with Keith Johnson. SIS330591-330634 at 597.

³⁷¹ Discussions with Keith Johnson and Jean Sargent. Jean Sargent was aware of the SIS’s repair service and the potential cost savings it provided when she was working with Marin County hospital in Fall 2019, a Vizient member, as an independent consultant.

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I understand Intuitive’s da Vinci systems and EndoWrist instruments are primarily sold to / used in acute care facilities.³⁷² In 2019, Vizient provided services for more than 50% of the U.S. acute care providers.³⁷³ Vizient currently provides services for more than 60% of the U.S. acute care providers.³⁷⁴

SIS had also presented and generated interest with hospital systems beyond Vizient healthcare providers, such as Banner.³⁷⁵ Given the interest in SIS’s services, it is likely SIS would have had customers in addition to Vizient’s members. Nonetheless, I limit this market share factor to Vizient acute care providers. I apply 55% (or the mid-point of the 60% and 50% noted above) as the Vizient market share factor.

(iv) Conversion rate – 15%, 50%, 70%

The next factor I account for is SIS’s and Vizient’s customer conversion to SIS repair services. I apply a 15% conversion rate in Year 1, 50% in Year 2, and 70% in Year 3 and thereafter, based on the expert opinions of Jean Sargent, SIS’s industry expert.

As addressed above, there was strong customer demand. SIS anticipated signing up nearly all of the Vizient acute care providers and others. According to Jean Sargent, based on her experience with significant cost savings program such as SIS’s EndoWrist repair program, more than 70% of the Vizient acute care providers would have participated.³⁷⁶

SIS anticipated a quick ramp up in 2020, both in sales and in-house repair capabilities.³⁷⁷ According to Jean Sargent there would have been a conversion timeframe to transition for this type of program. By the end of 2020, or Year 1, 30% of Vizient’s acute care providers would have reasonably converted.³⁷⁸ By the end of 2021, or Year 2, and thereafter, 70% would have reasonably converted, with a final conversion rate of approximately 75%.³⁷⁹

³⁷² Discussions with Keith Johnson and Jean Sargent. I understand Vizient members are usually larger healthcare providers, suggesting they represent an above average number of acute care facilities.

³⁷³ <https://web.archive.org/web/20191108191050/https://www.vizientinc.com/what-we-do>.

³⁷⁴ See, e.g., <https://www.vizientinc.com>.

³⁷⁵ Per discussion with Keith Johnson, I understand Banner is a member of Premier.

³⁷⁶ Discussion with Jean Sargent.

³⁷⁷ Discussions with Keith Johnson and Greg Posdal.

³⁷⁸ Discussion with Jean Sargent.

³⁷⁹ Discussion with Jean Sargent.

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Given these considerations, I apply a 15% conversion factor in 2020, or Year 1 (i.e., the mid-point between 0% as of January 1 and 30% as of December 31). I apply a 50% conversion factor in 2021, or Year 2 (i.e., the mid-point between 30% as of January 1 and 70% as of December 31). I apply a 70% conversion factor in 2022, or Year 3, and thereafter.

(v) Collection rate – 70%

The next factor I account for is EndoWrist instrument collection. I apply a 70% collection rate.

Despite best intentions, I understand not all expired EndoWrists would necessarily be collected by the acute health care providers. According to Jean Sargent, for an expensive instrument such as the EndoWrist, a 75% collection rate would be reasonable.³⁸⁰

Intuitive similarly targeted a greater than 70% collection rate for its contemplated EndoWrist refurbishment program in a September 2020 “Gen4 Instrument Refurbishment Pilot” document.³⁸¹

(vi) Repair yield rate – 72%

The next factor I account for is the repair yield. I apply a 72% repair yield rate.

Not all of the collected units would have been repairable. Generally speaking, SIS’s reparability yield on its various instruments exceeds 95%.³⁸²

Intuitive performed an EndoWrist refurbishment pilot on its top six instruments in 2020 and averaged 85% refurbishment yield.³⁸³ It also projected higher future refurbishment rates at 95% refurbishment for two (of the six) instruments, 90% for three, and 85% for one.³⁸⁴

SIS’s initial (limited) data suggested an 88% repair yield rate.³⁸⁵

³⁸⁰ Discussion with Jean Sargent.

³⁸¹ 30(b)(6) Deposition of Colin Morales (November 1, 2022) at Ex. 143 (Intuitive 00626597-626616 at 604).

³⁸² Discussion with Keith Johnson. *See also, e.g.*, SIS003653-0033670 at 661.

³⁸³ Morales 30(b)(6) Dep. at Ex. 143 (Intuitive 00626597-626616 at 609).

³⁸⁴ Morales 30(b)(6) Dep. at Ex. 143 (Intuitive 00626597-626616 at 612).

³⁸⁵ **Schedule 14.0.**

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Based on data from Restore for instruments that were collected, approximately 72% were repairable.³⁸⁶

Given these considerations, and to remain at the conservative end of the repairability range, I apply a 72 % repair yield rate.

(vii) ‘Would-Have-Been’ EndoWrist repair units through 2025

I project the ‘Would-Have-Been’ EndoWrist units through 2025. As noted earlier, I assume trial is approximately December 2023 / January 2024. Assuming SIS prevails, SIS would then begin selling in 2024. A Year 1 conversion would be 2024, Year 2 would be 2025. At the end of Year 2 (i.e., 2025), SIS would achieve its maximum conversion rate.

(viii) ‘Would-Have-Been’ EndoWrist repair units – 2% to 12% of units sold

Accounting for the various factors above, the ‘Would-Have-Been’ EndoWrist repair units approximate a 2%, 8% and 12% penetration rate of Intuitive’s 2020, 2021, and 2022 EndoWrist unit sales, respectively.³⁸⁷

This Would-have-been penetration rate appears reasonable relative to other available data. For example, in August 2019, Intuitive analyzed potential Xi refurbishment and estimated penetration of approximately 41% or 50%.³⁸⁸

Another contemporaneous document, a February 2020 Deutsche Bank analysis, noted a 4% to 6% 2021 penetration rate was reasonable and potentially conservative.³⁸⁹ The analysis also noted each instrument could be repaired three times, suggesting a higher, 12% to 18% penetration rate.³⁹⁰

³⁸⁶ Deposition of Clifton Parker 43-45, 178-179 (October 25, 2022). Per Restore-00094918-00094956 at 922 (Parker Dep. Ex. 121), 215 out of 310 instruments collected in a 2-week sample that had lives on them passed Restore’s inspection (i.e., were repairable).

³⁸⁷ **Schedule 2.2.**

³⁸⁸ Intuitive-00581814-00581883 at 858, 868 and 877. One estimate shows 59,700 refurbished Xi instruments out of a total 144,985 Xi instruments forecasted in 2020. The other estimate shows 72,492 refurbished Xi instruments out of a total 144,985 Xi instruments forecasted in 2020.

³⁸⁹ Intuitive-00566055-00566082 at 056 (Zafar Dep. Ex. 113).

³⁹⁰ Intuitive-00566055-00566082 at 056 (Zafar Dep. Ex. 113).

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In 2016, Rebotix and Stryker had discussions about Stryker buying Rebotix.³⁹¹ According to two models Stryker prepared regarding this proposed transaction, it expected penetration rates of 8.5% to 9% for repairing EndoWrists.³⁹²

b) Actual EndoWrist repair units

At this point, none of the ‘Would-Have-Been’ EndoWrist repair units have been sold. I understand SIS continued to promote the repair program after the Alleged Wrongdoings, but those efforts were not successful due to Intuitive’s actions.³⁹³ In the event SIS prevails in this matter, I understand it will then begin again to promote the repair program. Assuming trial is resolved in approximately December 2023 / January 2024, SIS would then begin ramping up its repair services. For the Actual EndoWrist repair units, I use the Year 1, Year 2 and Year 3 conversion rates addressed above. Currently, I assume Year 1 is 2024 and the first year SIS will again begin selling its repair program.

c) Lost EndoWrist repair units

The difference between the ‘Would-Have-Been’ and Actual EndoWrist repair units represent SIS’s lost EndoWrist repair units. Those are shown on **Schedules 2.2**.

2. Lost revenue

To calculate SIS’s lost revenue, I have multiplied the lost EndoWrist repair units times SIS’s average selling price (“ASP”). Lost revenues are shown on **Schedule 2.1**. In order to calculate SIS’s ‘Would-Have-Been’ ASP, I applied the prices per the September 2019 Vizient Agreement Amendment to the corresponding volumes of EndoWrist instruments Intuitive sold between 2019 and 2022 to calculate a weighted average ASP.³⁹⁴

³⁹¹ Deposition of Stan Hamilton 35-39 and 126 (June 4, 2021) (*Rebotix Repair LLC v. Intuitive Surgical, Inc.*, No. 8:20-cv-02274-VMC-TGW (M.D. Fla. filed Sept. 28, 2020)).

³⁹² STRREB00001810 and STRREB00001827.

³⁹³ Discussions with Keith Johnson and Greg Posdal.

³⁹⁴ **Schedule 8.0.**

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3. Less: Incremental costs

In order for SIS to make the lost repairs revenue described above, it would have incurred additional costs. I refer to these additional costs as incremental costs. I have estimated SIS’s incremental costs under two models: (1) the in-house repair model, and (2) the distributor model. Incremental costs are shown on **Schedules 2.1** and **3.1**.

a) In-house repair model costs

SIS intended to purchase the chips and perform the EndoWrist repairs in-house (“In-house model”). Though it had not yet begun in-house repairs, SIS anticipated its in-house repairs to be low cost and profitable.³⁹⁵ As noted above, SIS has extensive experience providing repair services.

SIS’s In-house model incremental costs would have included the following:³⁹⁶

- Repair costs
- Chip costs
- 4% paid to Vizient
- SGA costs

(i) Repair costs

To estimate SIS’s repair costs, I use Intuitive’s September 2020 refurbishment costs estimates.³⁹⁷ Intuitive estimated refurbishment costs for its six largest selling EndoWrists.³⁹⁸ It did so for its South Haven (near Memphis) Tennessee facility as well as its facility in Mexico.³⁹⁹ SIS intended to repair the EndoWrists in the U.S.⁴⁰⁰ I use Intuitive’s South Haven estimated refurbishment costs.

³⁹⁵ Discussion with Greg Posdal.

³⁹⁶ Based on discussions with Greg Posdal and Keith Johnson.

³⁹⁷ **Schedule 9.0.**

³⁹⁸ 30(b)(6) Deposition of Colin Morales (November 1, 2022) at Ex. 143 (Intuitive 00626597-626616 at 626612-613).

³⁹⁹ 30(b)(6) Deposition of Colin Morales (November 1, 2022) at Ex. 143 (Intuitive 00626597-626616 at 626612-613).

⁴⁰⁰ Discussion with Greg Posdal.

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I note Intuitive used a higher fully burdened hourly technician cost rate (\$39 per hour) than SIS anticipated (approximately \$25 per hour).⁴⁰¹ I also note Intuitive’s estimated “Materials needed for Remanufacture” comprised more than half the repair costs for each of the six EndoWrists.⁴⁰² SIS did not expect to incur material costs of any significance.⁴⁰³ Rather, it expected to incur minimal or no costs for nearly all of EndoWrist instruments it would repair.⁴⁰⁴

Intuitive’s South Haven refurbishment cost (cost of goods sold) estimates, including the material costs, ranged from approximately \$107 to \$199 per instrument.⁴⁰⁵

(ii) Chip costs

To estimate SIS’s chip cost, I use Rebotix’s average sales price per chip to Restore.⁴⁰⁶ SIS anticipated purchasing chips at high volumes from Rebotix and/or Restore for approximately \$400 to \$450 apiece.⁴⁰⁷ SIS did not purchase chips alone (i.e., not bundled with repair service) directly from Rebotix or Restore. Restore did purchase chips in small volumes (three orders of 30 or less chips) from Rebotix.⁴⁰⁸ Those chip sales prices averaged approximately \$533 per unit.⁴⁰⁹

(iii) Vizient GPO administrative fee

To estimate SIS’s Vizient GPO administrative fee, I apply the 4% administrative fee SIS agreed to pay Vizient on all net sales for services it sold to Members.⁴¹⁰

⁴⁰¹ Intuitive-00626598 - 00626616 at 626612. According to Colin Morales testimony, the \$39 per hour was fully burdened (30(b)(6) Deposition of Colin Morales 49-57 at 56 (November 1, 2022)). Discussion with Greg Posdal. SIS356504.

⁴⁰² 30(b)(6) Deposition of Colin Morales (November 1, 2022) at Ex. 143 (Intuitive 00626597-626616 at 626612).

⁴⁰³ Discussion with Greg Posdal.

⁴⁰⁴ Discussion with Greg Posdal.

⁴⁰⁵ **Schedule 9.0.** See also, 30(b)(6) Deposition of Colin Morales (November 1, 2022) at Ex. 143 (Intuitive 00626597-626616 at 626612).

⁴⁰⁶ **Schedule 10.0.**

⁴⁰⁷ Discussion with Greg Posdal.

⁴⁰⁸ **Schedule 10.0.**

⁴⁰⁹ **Schedule 10.0.**

⁴¹⁰ **Schedule 2.1.** SIS330591-330634 at 597. SIS0000047-0000049. Discussion with Keith Johnson.

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(iv) SGA costs

The maximum annual lost EndoWrist repair units approximate 50,000 units.⁴¹¹ To estimate SIS’s variable selling, general and administrative (or “SGA”) costs, I use the variable portion of SIS’s SGA costs in the event they would have been repairing up to an additional 50,000 EndoWrist instruments annually.⁴¹² I have analyzed SIS’s SGA costs and estimate something less than 9% of sales would have been variable.⁴¹³ I use a 9% variable SGA cost rate.

Applying the 9% variable SGA cost rate to the approximate \$71 million of annual lost sales in 2023, for example, equates to more than \$6 million of SGA costs. The \$6 million of SGA costs applies to the additional approximate 50,000 EndoWrists instruments.

For comparison, I understand SIS repairs approximately 1,000,000 instruments annually (i.e., multiples of the 50,000 units), and has incurred less than \$6 million SGA costs in total for its entire business.⁴¹⁴ Thus, the maximum additional EndoWrist repairs are a fraction of the volume of instrument repairs SIS already does.

b) Distributor model costs

The Distributor model assumes SIS acted essentially as a distributor for the EndoWrist repair services. Rebotix and/or Restore would have provided the repair services. While this alternative was not SIS’s intention, SIS’s initial EndoWrist repair sales consisted of Rebotix performing the repair services.

SIS’s Distributor model incremental costs would have included the following:⁴¹⁵

- Repair services purchase price – prices paid to Rebotix (and/or Restore)
- 4% paid to Vizient (same as In-house model)
- SGA costs (same as In-house model)

Schedule 3.1 summarizes the Distributor model alternative Scenario 1 – Illegal Encryption lost profits damages.

⁴¹¹ **Schedule 2.2.**

⁴¹² **Schedule 15.1.**

⁴¹³ **Schedule 15.1.**

⁴¹⁴ Discussion with Greg Posdal. **Schedule 15.0.**

⁴¹⁵ Based on discussions with Greg Posdal and Keith Johnson.

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4. SIS’s In-house model lost profits through 2025 – approximately \$102.6 million

SIS’s In-house model lost profits are calculated by subtracting the In-house model incremental costs from lost revenue each year. To determine SIS’s In-house model lost profits damages, I calculated the present value of the lost profits as of January 1, 2024, the approximate trial timeframe.

5. SIS’s Distributor model lost profits through 2025 – approximately \$40.9 million

SIS’s Distributor model lost profits are calculated by subtracting the Distributor model incremental costs from lost revenue each year. SIS’s Distributor present value lost profits damages as of January 1, 2024 approximate \$40.9 million.

6. Annual lost profits per unit

The annual lost profits per unit for the S/Si and X/Xi are reasonably comparable in both the in-house model and distributor model. For example, in 2020, the annual lost profits per unit approximate \$570 for S/Si and \$549 for X/Xi in the in-house model, and approximate \$214 for S/Si and \$204 for X/Xi in the distributor model, respectively.⁴¹⁶ To the extent the respective share of S/Si and X/Xi units is different than those discussed above,⁴¹⁷ I would use these per-unit values to estimate damages.

F. Scenario 2 – Unenforceable Contracts lost profits damages

Scenario 2 assumes enforcing the hospital contracts is illegal. It also assumes SIS’s capability to repair S/Si EndoWrists would have similarly applied to X/Xi EndoWrists. However, it also takes into account that cracking the X/Xi encryption would have taken some period of time. [REDACTED]

⁴¹⁶ **Schedules 2.1 and 3.1.** The annual lost profits per unit amounts for years after 2020 are also shown on these schedules.

⁴¹⁷ For example, I understand SIS has accused Intuitive of taking step to force customer to switch from S/Si da Vinci robots for which EndoWrist repair is possible to X/Xi da Vinci robots for which EndoWrist repair was not possible. Comp. ¶¶ 108-109.

⁴¹⁸ Deposition of Clifton Parker 143-144 (October 25, 2022). Discussion with Kurt Humphrey.

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The Scenario 2 – Unenforceable Contracts analysis employs the same methodology as Scenario 1 – Illegal Encryption. The difference is the delayed capability to repair the X/Xi until a later date. Accordingly, the Year 1, Year 2 and Year 3 X/Xi conversion period begins later, in 2021 or 2022 (rather than 2020).

The Scenario 2 – Unenforceable Contracts analysis is summarized on **Schedules 4.0 to 4.5 and 5.0 to 5.3**. For Scenario 2 – Unenforceable Contracts lost profits damages, I similarly calculate In-house repair model damages and Distributor model damages.⁴¹⁹

Similar to Scenario 1, the annual lost profits per unit amounts for the S/Si and X/Xi are reasonably comparable in both the in-house model and distributor model.⁴²⁰

XV. Lanham Act Damages

As described above, SIS has accused Intuitive of unfair trade practices in violation of the Lanham Act.⁴²¹ In addition to SIS’s lost profits, I have also been asked to address disgorgement of Intuitive’s profits under the Lanham Act.

Under the Lanham Act, I understand a plaintiff is entitled to recover:⁴²²

...(1) defendant’s profits, (2) any damages sustained by the plaintiff, and (3) the costs of the action. The court shall assess such profits and damages or cause the same to be assessed under its direction. In assessing profits the plaintiff shall be required to prove defendant’s sales only; defendant must prove all elements of cost or deduction claimed. In assessing damages the court may enter judgment, according to the circumstances of the case, for any sum above the amount found as actual damages, not exceeding three times such amount. If the court shall find that the amount of the recovery based on profits is either inadequate or excessive the court may in its discretion enter judgment for such sum as the court shall find to be just, according to the circumstances of the case. Such sum in either of the above circumstances shall constitute compensation and not a penalty. The court in exceptional cases may award reasonable attorney fees to the prevailing party.

⁴¹⁹ **Schedule 1.0.**

⁴²⁰ **Schedules 4.1 and 5.1.**

⁴²¹ Compl. ¶¶ 122-126.

⁴²² 15 USC 1117: Recovery for violation of rights; (a) Profits; damages and costs; attorney fees (house.gov).

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I understand Lanham Act damages would begin no later than November 26, 2019, when Marin General Hospital, a SIS customer, received a letter from Intuitive about it using a third party (SIS) to reprogram the number of EndoWrist uses.⁴²³ For purposes of my analysis, I have already quantified the lost profit damages to SIS based on the lost repair units analyses addressed above under lost profits. Those lost SIS repair units begin in January 2020.

With respect to Intuitive’s profits that SIS would be entitled to under the Lanham Act, I have quantified Intuitive’s sales on the Scenario 2 – Unenforceable Contracts lost repair units on **Schedule 16.1** and **Schedule 16.2**, with a January 1, 2024 present value.

XVI. Conclusion

My opinions and analyses contained herein are based upon information that is presently known and available to me. As additional information is made available, I may update my opinions and analyses accordingly. I will provide updated calculations or interest calculations as appropriate. I also anticipate preparing illustrative trial exhibits based on information contained within this Report as well as any relevant additional information that becomes available hereafter.

Respectfully submitted,



Richard F. Bero, CPA, CVA
December 2, 2022

⁴²³ SIS000202-000204.

Data and Other Information Considered - as of December 2, 2022

Attachment 1

LEGAL FILINGS:

Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc. (Case No. 3:21-cv-03496-VC):

Complaint dated May 10, 2021
Defendant Intuitive Surgical, Inc.'s Notice of Motion, Motion and Memorandum of Points and Authorities in Support of its Motion to Dismiss the Complaint filed August 6, 2021
Declaration of Karen Hoffman Lent in Support of Defendant's Request for Judicial Notice in Support of Intuitive Surgical, Inc.'s Motion to Dismiss the Complaint with Exhibit 1 filed August 6, 2021
Request for Judicial Notice in Support of Intuitive Surgical, Inc.'s Motion to Dismiss the Complaint filed August 6, 2021
[Proposed Order] Granting Request for Judicial Notice filed August 6, 2021
Defendant Intuitive Surgical, Inc.'s Notice of Motion, Motion and Memorandum of Point and Authorities in Support of Motion to Stay filed August 13, 2021
[Proposed] Order Granting Defendant Intuitive Surgical Inc.'s Stay filed August 13, 2021
Declaration of Karen Hoffman Lent in Support of Defendant's Notice of Motion, Motion, and Memorandum of Points and Authorities in Support of Motion to Stay with Exhibits 1-4 filed August 13, 2021
Plain iff Surgical Instrument Service Company, Inc.'s Opposition to Defendant's Motion to Dismiss filed August 20, 2021
Plain iff's Initial Disclosures dated August 26, 2021
Intuitive's Initial Disclosures dated August 26, 2021
Plain iff Surgical Instrument Service Company, Inc.'s Opposition to Defendant's Motion to Stay filed August 27, 2021
Declaration of Joshua Van Hoven in Support of Plaintiff's Opposition to Defendant's Motion to Stay with Exhibits 1 and 2 filed August 27, 2021
Declaration of Gregory J. Posdal filed August 27, 2021
Defendant Intuitive Surgical, Inc.'s Reply Memorandum of Law in Support of its Motion to Dismiss the Complaint filed September 3, 2021
Defendant Intuitive Surgical, Inc.'s Reply Memorandum of Law in Support of its Motion to Stay filed September 3, 2021
Declaration of Karen Hoffman Lent in Support of Defendant's Reply Memorandum of Law in Support of its Motion to Stay with Exhibit 1 filed September 3, 2021
Order Granting in Part and Denying in Part Motion to Dismiss filed November 23, 2021
Defendant Intuitive Surgical, Inc.'s Answer, Affirmative Defense and Counterclaims with Exhibits 1-7 filed December 14, 2021
Plain iff/Counterclaim Defendant Surgical Instrument Service Company, Inc.'s Answer to Defendant/Counterclaim Plaintiff's Counterclaims filed January 10, 2022
Stipulated Protective Order filed with Exhibit A signed by Richard Bero, Beth Bergman, Joseph Laur, Ammar Susnerwala and Nick Romans filed March 30, 2022
Joint Stipulation and [Proposed] Order to Modify Schedule filed April 11, 2022

Interrogatories:

Defendant/Counterclaimant Intuitive Surgical, Inc.'s Objections and Responses to Plain iff Surgical Instrument Service Co., Inc.'s First Set of Interrogatories dated April 29, 2022
Plain iff Surgical Instrument Service Company, Inc.'s Answer and Objection to Defendant's Interrogatories First Set - Nos. 1-3 dated May 20, 2022
Plain iff Surgical Instrument Service Company, Inc.'s Answer and Objections to Defendant's Interrogatories Second Set - Nos. 4-18 dated August 8, 2022

Restore Robotics, et al. v. Intuitive Surgical, Inc. (Case No. 5:19-cv-00055-TKW-MJF):

Defendant's Answer, Affirmative Defense and Counterclaims filed September 30, 2019
Defendant's First Amended Counterclaims with Exhibits 1-3 filed November 28, 2019
Plain iffs Restore Robotics LLC and Restore Robotics Repairs LLC's Answer to Defendant's Amended Counterclaims filed December 12, 2019
Second Amended Complaint with Exhibits 1-5 filed March 29, 2021
Defendant's Answer and Affirmative Defense filed April 12, 2021

Rebotix Repair LLC v. Intuitive Surgical, Inc. (Case No. 8:20-cv-02274-VMC-TGW):

Complaint filed September 28, 2020
Defendant's Answer, Affirmative Defenses and Counterclaims with Exhibits A-E filed April 2, 2021
Rebotix's Answer and Affirmative Defenses to Intuitive's Counterclaims filed April 23, 2021

EXPERT REPORTS:

Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc. (Case No. 3:21-cv-03496-VC):

Expert Report of Jean Sargent dated December 2, 2022

Restore Robotics, et al. v. Intuitive Surgical, Inc. (Case No. 5:19-cv-00055-TKW-MJF):

Expert Report of Heather Rosecrans dated August 20, 2021

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Attachment 1

Expert Report of John Bomalaski dated August 20, 2021
Expert Report of Dr. Robert D. Howe dated August 20, 2021
Expert Report of Sara Parikh, Ph.D. dated August 20, 2021
Expert Report of Professor Christina DePasquale dated August 20, 2021
Expert Report of Loren K. Smith, Ph.D. dated August 20, 2021
Expert Rebuttal Report of Loren K. Smith, Ph.D. dated September 27, 2021
Rebuttal Expert Report of Christina DePasquale dated October 7, 2021
Supplemental Expert Report of Christina DePasquale dated October 28, 2021

Any additional documents cited therein.

Rebotix Repair LLC v. Intuitive Surgical, Inc. (Case No. 8:20-cv-02274-VMC-TGW):

Expert Report of Dr. John Bomalaski dated July 26, 2021
Expert Report of Robert Howe dated July 26, 2021
Expert Report of Kurt Humphrey dated July 26, 2021
Expert Report of Russell Lamb dated July 26, 2021
Expert Report of Gwen Mandel dated July 26, 2021
Expert Report of Robert Mills dated July 26, 2021
Expert Report of Sara Parikh dated July 26, 2021
Expert Report of Heather Rosecrans dated July 26, 2021
Expert Report of Joshua Sharlin dated July 26, 2021
Expert Report of Loren K. Smith, Ph.D. dated July 26, 2021
Amended Expert Report of Sara Parikh dated August 5, 2021
Expert Report of Larry Chiagouris dated August 30, 2021
Rebuttal Report of Robert Mills dated August 30, 2021
Expert Report of Kim Parnell dated August 30, 2021
Rebuttal Expert Report of Heather Rosecrans dated August 30, 2021
Expert Damages Rebuttal Report of Loren K. Smith, Ph.D. dated August 30, 2021
Expert Antitrust Merits Report of Loren K. Smith, Ph.D. dated August 30, 2021
Expert Report of Lawrence Stevens dated August 30, 2021
Supplemental Expert Report of Russell Lamb dated September 22, 2021
Supplemental Expert Report of Robert Mills dated September 22, 2021

Any additional documents cited therein.

DEPOSITIONS:

Restore Robotics, et al. v. Intuitive Surgical, Inc. (Case No. 5:19-cv-00055-TKW-MJF):

Mark Johnson dated April 29, 2021 with Exhibits 0001-0009
Todd Pope dated April 30, 2021 with Exhibits 1-7
30(b)(6) Restore Robotics LLC and Restore Robotics Repairs LLC through Clifton Earl Parker, and Clifton Parker Individually dated May 4, 2021 with Exhibits 1-7
David Robinson dated May 5, 2021
Kevin May dated May 6, 2021 with Exhibits 1-24
John "Jake" Joseph Colletti Jr., dated May 7, 2021 with Exhibits 1-13
Greg Posdal dated May 10, 2021 with Exhibits 1-6
Mills Vautrot dated May 11, 2021 with Exhibits 1-12
West E. Gordon dated May 13, 2021 with Exhibits 1-17
Sherry Harvey dated May 14, 2021 with Exhibits 1-7
Cario Wasfy dated May 18, 2021 with Exhibits 1-23
Dave Rosa dated May 19, 2021 with Exhibits 1-9

Data and Other Information Considered - as of December 2, 2022

Attachment 1

Robert DeSantis dated May 20, 2021 with Exhibits 1-9
Kyle Marks dated May 21, 2021 with Exhibits 1-8
Tyler McDonald dated May 21, 2021 with Exhibits 1-17
Ronald Lee Blair Jr. dated May 24, 2021 with Exhibits 1-3
Eugene Otto Dickens M.D., dated May 27, 2021 with Exhibits 1-2
Amie Renee Reed dated May 27, 2021 with Exhibits 1-3
Kevin May (Vol. II) dated June 8, 2021 with Exhibits 1-6
Michael Madewell dated June 11, 2021 with Exhibits 1-21

Rebotix Repair LLC v. Intuitive Surgical, Inc. (Case No. 8:20-cv-02274-VMC-TGW):

Myriam Curet M.D., dated May 7, 2021 with Exhibits 1-6
Glenn Vavoso dated May 14, 2021 with Exhibits 1-39
Ronald Lee Blair, Jr. dated May 24, 2021 with Exhibits 1-22
Edward W. Harrich dated May 24, 2021 with Plaintiff's Exhibits 1-9, Defendant's Exhibits DF1-DF5
Katie Scoville dated May 26, 2021 with Exhibits 1-13
Robert DeSantis dated May 27, 2021 with Exhibits 1-29
Stacey Donovan dated May 27, 2021 with Exhibits P1-P9, D1-D3
30(b)(6) Rebotix Repair, LLC through Glenn Papit dated June 2, 2021 with Exhibits 1-24
Stan (Lay) Hamilton dated June 4, 2021 with Exhibits 1-10
David Mixner dated June 10, 2021 with Exhibits 1-18
Chris Gibson dated June 22, 2021 with Exhibits 1-22

In Re: Da Vinci Surgical Robot Litigation - All Cases:

Judith Schimmel dated September 22, 2022 with Exhibits 1-20
Sandra Guerro dated September 23, 2022 with Exhibits 21-46
Mark Early dated October 6, 2022 with Exhibits 28, 30, 59-81
Disha Peswani dated October 6, 2022 with Exhibits 1-17
Margaret Nixon dated October 7, 2022 with Exhibits 18-32
John Wagner dated October 11, 2022 with Exhibits 54, 56, 104-116
Shreya Purohit dated October 12, 2022 with Exhibits 33-53
John Francis M.D. dated October 14, 2022 with Exhibits 54-55
Ryan Shaw dated October 19, 2022 with Exhibits 56-74
Gayle Perry dated October 20, 2022 with Exhibits 75-79, 81-84
Ricardo Estape, M.D. dated October 22, 2022 with Exhibits 118-120, Estape 01, 34, 61, 95
Clifton Parker dated October 25, 2022 with Exhibits 121-134
30 (b)(6) Nickola (Nicky) Goodson dated October 27, 2022 with Exhibits 85-106
30(b)(6) Keith Johnson dated October 27, 2022 with Exhibits 135-140
Keith Johnson (Individually) dated October 27, 2022 with Exhibits 141-144
Imron Zafar dated November 1, 2022 with Exhibits 1-5, 111-113
Mario Lowe dated November 3, 2022 with Exhibits 81-83, 144
Kevin May dated November 3, 2022 with Exhibits 154-156, Plaintiff's Exhibit 1
John Sampson dated November 3, 2022 with Exhibits 184-193
Stan Hamilton dated November 4, 2022 with Exhibits 157, 158, 160, 204
Sharathchandra (Shark) Somayaji dated November 4, 2022 with Exhibits 201, 203, 205-208, 211-213, 216-218, 220, 223-224, 227-230
Todd Tourand dated November 4, 2022 with Exhibits 39, 200, 202, 209, 210, 214, 215, 219, 221, 222, 225, 226
30 (b)(6) Marshall Mohr dated November 7, 2022 with Exhibits 231-236

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30(b)(1) Grant DuQue (Personal) dated November 8, 2022 with Exhibits 238, 240-241, 243-244, 246-249, 257-258, 263
30(b)(6) Grant DuQue dated November 8, 2022 with Exhibits 264, 266-269
David Fabricant dated November 8, 2022 with Exhibits 239, 239A-239D, 242, 242A, 245, 245A, 250-253, 253A, 254-256, 259, 261-262
Ca herine Mohr M.D. dated November 9, 2022 with Exhibits 270-285
30(b)(1) Colin Morales (Personal) dated November 9, 2022 wi h Exhibits 120-134
30(b)(6) Colin Morales dated November 9, 2022 with Exhibits 135-143
Dan Jones dated November 10, 2022 wi h Exhibits 286-294
Rick Ferreira dated November 10, 2022 with Exhibits 207-220, 295-296
30 (b)(6) Nickola (Nicky) Goodson dated November 16, 2022 with Exhibit 297

Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.:

30(b)(1) Jose Gonzales (Personal) dated October 17, 2022 with Exhibits 39, 45, 82, 83
30(b)(6) Jose Gonzales dated October 17, 2022 wi h Exhibits 84-99, 117
30(b)(6) Greg Posdal dated November 1, 2022 with Exhibits 145-146, Previously Marked Exhibits 136, 138
30(b)(1) Greg Posdal (Personal) dated November 1, 2022 with Exhibits 147-148, Previously Marked Exhibits 107, 143

DISCUSSIONS WITH:

SIS personnel:

Keith Johnson, Executive Vice President, Sales and Clinical Programs
Greg Posdal, President and C.E.O

Jean Sargent, industry expert

DOCUMENTS WITH BATES STAMPS:

ALPIN00001-00005	Intuitive-00223902-00223935	Intuitive-00602325	Restore-00001939	SIS091827-091828	SIS196155
BB001260	Intuitive-00223937-00223970	Intuitive-00602576-00602578	Restore-00002260-00002265	SIS091833	SIS196156
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BSWH-0000446-0000448	Intuitive-00230855	Intuitive-00603164	Restore-00003932-00003942	SIS091839	SIS196159
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Intuitive-00104928-00104953	Intuitive-00579633-00579645	REBOTIX054249-054249	SIS033371-033438	SIS142445	SIS340585-340599
Intuitive-00105904-00106106	Intuitive-00581597	REBOTIX054620-054620	SIS033590-033593	SIS142683-142698	SIS341124
Intuitive-00106127-00106128	Intuitive-00581618	REBOTIX054897	SIS033653	SIS142726-142742	SIS341132
Intuitive-00106653-00106658	Intuitive-00581814-00581883	REBOTIX055131	SIS033654	SIS142766-142782	SIS343965

Data and Other Information Considered - as of December 2, 2022

Attachment 1

Intuitive-00110242-00110243	Intuitive-00582105-00582117	REBOTIX055134	SIS033655-033660	SIS142937-142939	SIS343965-343971
Intuitive-00110255-00110258	Intuitive-00582618-00582629	REBOTIX055331	SIS033663	SIS143176	SIS343965-343971
Intuitive-00111192-00111193	Intuitive-00583337-00583347	REBOTIX055419	SIS033664-033665	SIS143178	SIS344662-344670
Intuitive-00113020-00113020	Intuitive-00583659-00583707	REBOTIX055424	SIS033654	SIS143365-143366	SIS346078-346080
Intuitive-00114808-00114839	Intuitive-00585561-00585659	REBOTIX055565	SIS038107-038109	SIS143367-143374	SIS346124-346129
Intuitive-00115483-00115501	Intuitive-00586241-00586249	REBOTIX055566	SIS038110-038112	SIS143466-143477	SIS346133
Intuitive-00115576-00115578	Intuitive-00586668-00586708	REBOTIX056297	SIS038113-038169	SIS143490	SIS346146
Intuitive-00115682-00115689	Intuitive-00593443-00593480	REBOTIX056325	SIS038223-038290	SIS143895-143964	SIS346147
Intuitive-00118636-00118706	Intuitive-00593897-00593981	REBOTIX056326	SIS038293-038362	SIS145108	SIS346180-346195
Intuitive-00121229-00121230	Intuitive-00594517-00594542	REBOTIX056394	SIS043777-043778	SIS146228-146234	SIS346200-346215
Intuitive-00122488-00122603	Intuitive-00594883-00594902	REBOTIX056408	SIS045193-045194	SIS146768	SIS346248
Intuitive-00124485-00124487	Intuitive-00594904-00594949	REBOTIX057417-057417	SIS045195-045198	SIS146838	SIS346265
Intuitive-00128685	Intuitive-00595404	REBOTIX057473	SIS045199-045200	SIS146989	SIS346266
Intuitive-00128687-00128691	Intuitive-00595405	REBOTIX058675	SIS045201-045203	SIS148945	SIS346267
Intuitive-00128700-00128728	Intuitive-00595406	REBOTIX059010-059013	SIS045227	SIS149741	SIS346306-346322
Intuitive-00129015	Intuitive-00595407	REBOTIX059648-059651	SIS045231-045232	SIS158253-158271	SIS346641-346657
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Intuitive-00138863-00138863	Intuitive-00595411	REBOTIX062113	SIS047175-047180	SIS161612	SIS347997
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Intuitive-00139238	Intuitive-00595415	REBOTIX062427	SIS063100-063101	SIS166875-166876	SIS356412-356437
Intuitive-00139709-00139741	Intuitive-00595416	REBOTIX062442	SIS063495	SIS166877	SIS356438-356439
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Intuitive-00154125-00154126	Intuitive-00595434	REBOTIX073787	SIS070473-070475	SIS175964-175972	SIS357152-357153
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Intuitive-00157098-00157099	Intuitive-00595437	REBOTIX081801-081815	SIS070555-070558	SIS175991-175999	SIS357177-357178
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Intuitive-00173706	Intuitive-00595441	REBOTIX101177-101184	SIS070883	SIS191465-191466	SIS357262-357267
Intuitive-00174591-00174604	Intuitive-00595442	REBOTIX103066-103075	SIS070988	SIS191467	SIS357268
Intuitive-00185828	Intuitive-00595443	REBOTIX140009-140013	SIS070994	SIS191494-191495	SIS357269-357272
Intuitive-00186899	Intuitive-00595444	REBOTIX140015-140019	SIS071129-071130	SIS191496	SIS357273
Intuitive-00187238-00187248	Intuitive-00595445	REBOTIX143364-143367	SIS073497	SIS192056	SIS357274-357277
Intuitive-00192940-00192960	Intuitive-00595446	REBOTIX143532-143533	SIS075739	SIS194492-194495	SIS357278-357279

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Intuitive-00194074-00194089	Intuitive-00595447	REBOTIX144717-144721	SIS075742-075743	SIS194501-194504	SIS357280-357283
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Intuitive-00203904-00203907	Intuitive-00595449	REBOTIX145062-145084	SIS080897	SIS195961-195963	SIS357286-357291
Intuitive-00203908-00203910	Intuitive-00595450	REBOTIX162208-162212	SIS081049-081065	SIS195964-195966	SIS357292
Intuitive-00203911-00203932	Intuitive-00595451	REBOTIX162404-162424	SIS081069-081083	SIS195967-195971	SIS357293-357298
Intuitive-00210269	Intuitive-00595452	REBOTIX164558-164560	SIS081102-081117	SIS195972-195975	SIS357299-357301
Intuitive-00211776-00211778	Intuitive-00595453	REBOTIX164733-164733	SIS081197	SIS196006	SIS357302-357308
Intuitive-00213893-Intuitive-00213895	Intuitive-00595454	REBOTIX165105-165108	SIS081200	SIS196007	STRREB00000187-00000190
Intuitive-00214265-00214265	Intuitive-00595455	REBOTIX165260	SIS081282-081284	SIS196008	STRREB00000215-00000217
Intuitive-00214266-00214278	Intuitive-00595456	REBOTIX165487-165492	SIS087771	SIS196009	STRREB00000218-00000219
Intuitive-00214279	Intuitive-00595457	REBOTIX165540	SIS088060	SIS196010-196013	STRREB00000259
Intuitive-00214280	Intuitive-00595458	REBOTIX165571-165573	SIS088061-088063	SIS196027-196028	STRREB00000260-00000273
Intuitive-00215018-00215029	Intuitive-00595459	REBOTIX165623	SIS090681-090683	SIS196029	STRREB00000276-00000277
Intuitive-00215503-00215511	Intuitive-00595460	REBOTIX165846-165851	SIS090943-090944	SIS196055-196056	STRREB00000278
Intuitive-00215547-00215558	Intuitive-00595461	REBOTIX166019	SIS090945-090952	SIS196057	STRREB000001682
Intuitive-00215972-00215983	Intuitive-00595462	REBOTIX171110-171113	SIS090989	SIS196058	STRREB000001810
Intuitive-00216481-00216492	Intuitive-00595463	REBOTIX174692-174696	SIS091197	SIS196059	STRREB000001827
Intuitive-00216786-00216798	Intuitive-00595673-00595694	REBOTIX174971-174976	SIS091199	SIS196071	STRREB000002039
Intuitive-002175344	Intuitive-00596101	REBOTIX174977-174982	SIS091221-091235	SIS196072-196074	STRREB000002553-00002555
Intuitive-00218424-00218431	Intuitive-00596102-00596106	REBOTIX175080-175083	SIS091241-091257	SIS196075	STRREB000003853
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Intuitive-00221603-00221626	Intuitive-00601505-00601511	REBOTIX175328	SIS091769	SIS196085	
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Intuitive-00222027-00222038	Intuitive-00602098	Restore-00001538-00001578	SIS091796-091797	SIS196087-196091	

DOCUMENTS WITHOUT BATES STAMPS:

SIS Financial Statements:

2019 income statement.xls
Apr 2018 Income Statement.xls

SIS Sales by Customer:

Annual Sales by Hosp.xls

SIS Tax Returns:

Tax Return - Surgical Instrument Service Co. - 2019 Client Copy

Copy of State Tax Research (003)

Dept_Summary (1)

Dept_Summary

Vizient_Membership_Eligibility-2022-11-26T21_40_59

Vizient_Public_Sector_Eligibility-2022-11-26T21_43_04

INDEPENDENT RESEARCH:

Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2017

Intuitive Surgical, Inc. Annual Report 2018 with Form 10-K for the fiscal year ended December 31, 2018

Intuitive Surgical, Inc. Annual Report 2019 with Form 10-K for the fiscal year ended December 31, 2019

Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2020

Intuitive Surgical, Inc. Form 10-K for the fiscal year ended December 31, 2021

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Attachment 1

New Membership Agreement Between Vizient and the Children's Hospital Association Expands Services to Include Supply Chain Analytics Solutions

Vizient Announces 11 Member Agreements for Q1 2022

Vizient Announces 15 New, Renewed or Expanded Member Agreements in Q1

Vizient Announces 21 New, Renewed or Expanded Member agreements in Q2

Vizient Announces 35 New, Renewed or Expanded Member Agreements in Q3 and Q4 of 2020

Vizient Announces 97 New, Renewed or Expanded Member Agreements in 2021

Vizient Announces New Member Agreement with The University of Texas System

Vizient Announces New Membership Agreement with Leading Academic Health System

Vizient Announces New Membership Agreement with SSM Health

da Vinci Surgical System EndoWrist/Single-Site Instrument & Accessory Catalog (May 2014)

Da Vinci Xi X Instrument & Accessory Catalog (January 2019)

Da Vinci X/Xi Instrument & Accessory Catalog (October 2021)

WEBSITES:

<https://www.aha.org/statistics/fast-facts-us-hospitals>

<https://bmpmedical.com/reasons-to-switch-to-single-use-medical-devices-and-disposable-medical-supplies/>

<https://www.carevoyance.com/blog/acute-care-hospitals>

<https://www.cdc.gov/oralhealth/infectioncontrol/faqs/single-use-devices.html>

<https://www.definitivehc.com/blog/how-many-hospitals-are-in-the-us>

<https://www.definitivehc.com/blog/top-10-gpos-by-staffed-beds>

<https://www.fda.gov/media/150141/download>

<https://www.fda.gov/medical-devices/reprocessing-reusable-medical-devices/what-are-reusable-medical-devices>

<https://www.fda.gov/medical-devices/products-and-medical-procedures/reprocessing-reusable-medical-devices>

<https://healthtrustpg.com/about-healthtrust/>

<https://investors.premierinc.com/events-and-reports/reports/default.aspx?section=report>

<https://investors.premierinc.com/news/press-release-details/2016/Premier-Inc-and-Banner-Health-Expand-Partnership/default.aspx>

<https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>

<https://premierinc.com/about>

<https://rebotixrepair.com>

<https://newsroom.vizientinc.com/en-US/releases/vizient-announces-11-member-agreements-for-q1-2022>

<https://supplychainassociation.org/about-us/what-is-gpo>

<https://web.archive.org/web/20191108191050/https://www.vizientinc.com/what-we-do>

<https://www.yankeeralliance.com/content/premier-certified-sponsor-affiliates>

<https://www.vizientinc.com>

Moore, Eric J., "Robotic Surgery," Britannica (<https://www.britannica.com/science/robotic-surgery>)

15 USC 1117: Recovery for violation of rights (a) Profits; damages and costs; attorney fees ([house.gov](https://www.house.gov))

OTHER:

American Institute of Certified Public Accountants (AICPA) Practice Aid (2006)

Association of International Certified Public Accountants (AICPA) Forensic & Valuation Services Practice Aid – Calculating Lost Profits (2018)

The Comprehensive Guide to Economic Damages: Volume One (2020 6th ed., BVR Publications)

Any additional documents, websites, or other information referenced throughout this report.

ATTACHMENT 2



RICHARD F. BERO, CPA, CVA

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Phone – (262) 522-7922 Fax – (262) 436-2444

rbero@berogroup.com

PROFESSIONAL EXPERIENCE:

The BERO Group / Corporate Financial Advisors, LLC

Managing Director

Waukesha, Wisconsin

December 1995-Present

Mr. Bero founded Corporate Financial Advisors in 1995 and served as Managing Director. The BERO Group evolved from Corporate Financial Advisors and Mr. Bero serves as Managing Director. Mr. Bero provides financial and accounting consulting services and expert testimony pertaining to valuation issues and financial damages issues.

Coopers & Lybrand

Manager – Litigation & Claims Services

Milwaukee, Wisconsin

1994-1995

Mr. Bero was the Manager and Practice Leader of the Coopers & Lybrand Milwaukee Litigation & Claims Services practice.

Peterson Consulting Limited Partnership

Executive Consultant

Milwaukee, Wisconsin

Chicago, Illinois

1989-1994

1987-1989

Mr. Bero provided litigation and business dispute support services to trial attorneys and corporate counsel.

EDUCATION:

University of Wisconsin–Madison

Bachelor of Business Administration

Accounting and Finance

1986

ACTIVITIES/OTHER:

Intellectual Property Valuation Instructor – National Association of Certified Valuation Analysts
Licensing Executives Society – Co-Chair Wisconsin Chapter – 2006-2008
Intellectual Property Owners Association – Damages Committee Member – 2004-present
National Association of Certified Valuation Analysts, CVA
Wisconsin Institute of Certified Public Accountants:
Board of Directors – 2000-2002
Chairman CPA's In Industry – Committee 1997-1999
Outstanding Committee Chairperson Award – 1997-1998
American Institute of Certified Public Accountants
Becker CPA Review – Instructor 1995-1998

EXPERT WITNESS TESTIMONY – LAST FOUR YEARS:

ABC Corporation I et al v. The Partnership and Unincorporated Associations Identified on Schedule "A"
United States District Court – Northern District of Illinois
Case No. 1:20-cv-04806 (filed 8/17/20)
December 2022 (Hearing Testimony)
February 2022 (Deposition Testimony)

Condair Group AG v. Dri-Steem Corporation
United States District Court – U.S. District of Minnesota
Case No. 0:21-cv-00863 (filed 3/29/21)
September 2022 (Deposition Testimony)

Don Lee Farms, a division of Goodman Food Products, Inc., v. Beyond Meat Inc., et al.
State of California – Los Angeles County
Case No. BC662838 (filed 5/25/17)
April 2022 (Deposition Testimony)

G.W. Lisk Company, Inc. v. Power Packer North America, Inc. d/b/a GITS Manufacturing Company
United States District Court – Southern District of Iowa
Case No. 4:17-cv-00273 (filed 7/21/17)
April 2022 (Deposition Testimony)

Sartin et al. v. Chula Vista Inc. et al.
United States District Court – Eastern District of Wisconsin
Case No. 2:18-cv-01890-WED (filed 11/30/18)
October 2021 (Deposition Testimony)

Cyntec Company, Ltd. v. Chilis Electronics Corp. and Chilis America Ltd.
United States District Court – Northern District of California
Case No. 4:18-cv-00939-PJH (filed 2/14/18)
August 2021 (Trial Testimony)
June 2020 (Deposition Testimony)

Wudi Industrial (Shanghai) Co., Ltd. v. Wai L. Wong
United States District Court – Eastern District of Virginia
Case No. 1:20-cv-00908-CMH-MSN (filed 8/7/20)
April 2021 (Deposition Testimony)

Vermeer Corporation v. The Toro Company
United States District Court – Southern District of Iowa
Case Nos. 4:17-cv-0076, 4:19-cv-00050 (filed 2/28/17; 2/12/19)
October 2020 (Deposition Testimony)

AOS Holding Company and A.O. Smith Corporation v. Bradford White Corporation
United States District Court – District of Delaware
Case No. 1:18-cv-00412-LPS (filed 3/16/18)
August 2020 (Trial Testimony)
November 2019 (Deposition Testimony)

RAM Group, Inc. v. H5G, LLC
State of Wisconsin – Milwaukee County
Case No. 2018CV010102 (filed 12/10/18)
June 2020 (Deposition Testimony)

Dimensions Events LLC v. Danziger USA
Chicago Rabbinical Council (DT #17-09)
May 2019 (Arbitration Hearing Testimony)
May 2019 (Deposition Testimony)

Smart Solar, Inc. d/b/a Smart Living Home & Garden v. Sky Billiards, Inc. d/b/a Best Choice Products
United States District Court – Northern District of Illinois
Case No.: 1:17-cv-04211 (filed 6/2/17)
April 2019 (Deposition Testimony)

Gold & Levy d/b/a Rosseto v. Cal-Mil Plastic Products, Inc., et al.
United States District Court – Northern District of Illinois
Case No.: 1:17-cv-00786-JBG-YBK (filed 1/31/17)
December 2018 (Deposition Testimony)

PUBLICATIONS:

The Comprehensive Guide to Economic Damages, “Patent Infringement Damages: Lost Profits and Royalties”, “Design Patent Damages” and “Trade Secret Damages” (Chapters 28, 29 and 30, 2020 6th ed., Business Valuation Resources, LLC)

Bero, Richard. *The Litigator’s Damages Blueprint: The Pragmatic Solution*. Wisconsin: 422 Doty, LLC, 2019

The Comprehensive Guide to Economic Damages, “Patent Infringement Damages: Lost Profits and Royalties” and “Trade Secret Damages” (Chapters 26 and 27, 2018 5th ed., BVR Publications)

The Comprehensive Guide to Economic Damages, “Patent Infringement Damages: Lost Profits and Royalties” (Chapter 26, 2016 4th ed., BVR Publications)

The Comprehensive Guide to Lost Profits and Other Commercial Damages, “Patent Infringement Damages: Lost Profits and Royalties” (Chapter 25, 2014 3rd ed., BVR Publications)

April 2011 – CCH Business Valuation Alert, “The *Uniloc* Case: 25 Percent Rule of Thumb Rejected”

The Comprehensive Guide to Lost Profits, “Lost Profits Damages in Patent Infringement Lawsuits” (Chapter 19, 2011 ed., BVR Publications)

August 2009 – IP Law360 – “Demand for the Patented Product – Lower Bar?”

The Comprehensive Guide to Lost Profits, “Lost Profits Damages in Patent Infringement Lawsuits” (Chapter 12, 2009 ed., BVR Publications)

October 2008 – AIPLA White Paper – “Constructing Royalty Rates”

February 2008 – IP Law360 – “IP Litigation in China and the U.S.”

Global Intellectual Property Asset Management Report, “Intellectual Property Metrics Today: It Can Be Done” (June 2005 and July 2005)

Proving and Pricing Construction Claims, “Claims for Lost Profit” (Chapter 14, 2nd ed., 1996, Wiley Law Publications)

PRESENTATIONS:

November 2021	Business Valuation Resources, LLC BVR's Special Series on New Economic Damages Guide Patent Royalty Damages – What’s the Approach? Co-Presenter: John L. Abramic, Steptoe & Johnson LLP
May 2021	Business Valuation Resources, LLC National Economic Damages Virtual Conference 2021 (Day 1) Patent Infringement Damages Co-Presenter: Autumn N. Nero, Perkins Coie LLP
November 2020	American Intellectual Property Law Association Damages Subcommittee – Speaker Series Webinar Part II The Pragmatic Solution©
May 2020	American Intellectual Property Law Association Damages Subcommittee – Speaker Series Webinar Part I The Pragmatic Solution©
February 2020	Marquette Law School Guest Instructor – IP Litigation Class Milwaukee, Wisconsin
May 2019	Milwaukee Bar Association The Pragmatic Solution© Co-Presenter: Shane Brunner, Milwaukee Best & Friedrich LLP Milwaukee, Wisconsin

July 2018	Intellectual Property Owners Association – IP Chat Channel Webinar What’s Next for Design Patent Damages? The DOJ Test on Trial Co-Presenters: James Dottavio, Ford Motor Company and Elizabeth Ferrill, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP
September 2016	Wisconsin Intellectual Property Law Association Patent and IP Damages Update Milwaukee, Wisconsin
December 2015	WestLegalEdcenter Webinar Recent Patent Royalty Damages Decisions – Update & Discussion
October 2015	WestLegalEdcenter Webinar Recent Patent Royalty Damages Decisions – Update & Discussion
October 2015	Milwaukee Bar Association VirnetX and Ericsson – The Latest on Apportionment and Comparable Licenses Milwaukee, Wisconsin
July 2015	Hot Topics in Patent Royalty Damages Webinar Business Valuation Resources’ 2015 Special Series on Intellectual Property
April 2014	Michigan Intellectual Property Law Association Hot Topics in Patent Damages Troy, Michigan
May 2013	Hot Topics in Patent Royalty Damages Business Valuation Resources Online Symposium on Economic Damages: Part 3 Chicago, Illinois
September 2011	WestLegalEdcenter Webinar Recent Patent Damages Decisions – What is the Effect
August 2011	WestLegalEdcenter Webinar Constructing Royalty Rate Damages
January 2011	The Evolution of the Entire Market Value Rule Business Valuation Resources Webinar Series on Advanced Topics in Lost Profits Damages Chicago, Illinois
September 2010	Patent Damages: Managing the Risks and Contingent Costs Business Valuation Resources / Morningstar Summit on Best Practices in Valuing Intellectual Property Chicago, Illinois
March 2010	Tianjin Bar Association Damage Analysis Techniques and Considerations in U.S. Patent Litigations Tianjin, China

March 2010	Beijing Lawyers Association Damage Analysis Techniques and Considerations in U.S. Patent Litigations Beijing, China
December 2009	Milwaukee Bar Association Constructing Royalty Rate Damages Milwaukee, Wisconsin
October 2009	Michigan Intellectual Property Law Association Constructing Royalty Rate Damages Detroit, Michigan
June 2009	Licensing Executive Society – Chicago Chapter Constructing Royalty Rates Chicago, Illinois
March 2009	Milwaukee Bar Association Patent Infringement Damages – Working Effectively With Your Damages Expert Milwaukee, Wisconsin
January 2009	Wisconsin Intellectual Property Law Association Constructing Royalty Rates Milwaukee, Wisconsin
November 2008	Licensing Executive Society – Minnesota Chapter Constructing Royalty Rates Minneapolis, Minnesota
October 2008	American Intellectual Property Law Association – Annual Meeting Constructing Royalty Rates Washington, D.C.
October 2008	Minnesota Intellectual Property Law Association Constructing Royalty Rates Minneapolis, Minnesota
June 2008	Presentation to Judges and IP attorneys in China The Development of Patent Damages Shenzhen, China
May 2008	Licensing Executive Society International – Spring Conference Avoiding Intellectual Property Hurdles in the U.S. - The View from China Roundtable Moderator Chicago, Illinois
March 2008	Marquette Law School Royalty Damages in Patent Litigation Guest Instructor – IP Litigation Class Milwaukee, Wisconsin

October 2007	Guarding the Treasure: IP Valuation & Remedies Panelist Sponsored by Foley & Lardner New York, New York
October 2007	Shanghai Bar Association Patent Litigation & Valuation – Real World Examples in the U.S. Shanghai, China
October 2007	Shenzhen Society of Certified Public Appraisers Intellectual Property, Valuation and Damages Analysis – Real World Examples in the U.S. Shenzhen, China
May 2007	Shanghai Intellectual Property Service Center Intellectual Property in the U.S.: Opportunities, Valuation & Litigation Shanghai, China
May 2007	Shenzhen Bar Association Managing and Understanding the Value of IP – Real World Examples in the U.S. Shenzhen, China
October 2006	China Hi-Tech Fair 2006 Protection of Chinese Intellectual Property in the U.S. Patent Damages & Ways to Avoid Infringement Shenzhen, China
August 2006	Nanshan Sub-Bureau of Intellectual Property Administration Intellectual Property Value Issues in the United States an Overview for Chinese Businesses Shenzhen, China
March 2006	Milwaukee Bar Association Hindsight is 20/20: Developing & Presenting Damages in Intellectual Property Litigation and Complex Litigation Milwaukee, Wisconsin
December 2005	Wisconsin Intellectual Property Law Association Intellectual Property Damages Update & Discussion Pewaukee, Wisconsin
October 2005	Licensing Executives Society – Annual Meeting Facilitator: Advanced Practices Working Session III: To Sue or Not? How to Decide Phoenix, Arizona
September 2005	Digital Fabrication 2005 Seminar Panel Discussion: Intellectual Property Baltimore, Maryland

September 2005	Intellectual Property Owner's Annual Meeting Patent Infringement Damages Update and Discussion Seattle, Washington
April 2005	Licensing Executives Society – Wisconsin Chapter What's Reasonable: Royalty Damages in Patent Litigation Fond Du Lac, Wisconsin

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Damages Summary

Schedule 1.0

	2020	2021	2022	2023	2024 (discounted)	2025 (discounted)	Total
Lost profits							
<u>Scenario 1 - Illegal Encryption</u>							
[A] In-house model	\$4,861,686	\$16,979,680	\$24,223,614	\$27,662,628	\$22,046,612	\$6,850,616	\$102,624,836
[B] Distributor model	\$1,809,430	\$6,787,198	\$9,680,170	\$11,066,580	\$8,823,417	\$2,742,135	\$40,908,930
<u>Scenario 2 - Unenforceable Contracts</u>							
<u>2 Year X/Xi delay</u>							
[C] In-house model	\$752,970	\$1,069,936	\$5,610,902	\$19,830,094	\$22,046,612	\$6,850,616	\$56,161,130
[D] Distributor model	\$282,694	\$417,536	\$2,228,402	\$7,930,754	\$8,823,417	\$2,742,135	\$22,424,938
<u>1 Year X/Xi delay</u>							
[E] In-house model	\$752,970	\$5,842,528	\$17,455,507	\$27,662,628	\$22,046,612	\$6,850,616	\$80,610,861
[F] Distributor model	\$282,694	\$2,328,302	\$6,970,497	\$11,066,580	\$8,823,417	\$2,742,135	\$32,213,625
<u>Lanham Act</u>							
[G] Scenario 2 - 2 year X/Xi delay	\$3,397,612	\$4,956,376	\$26,724,252	\$94,852,384	\$105,499,912	\$32,785,303	\$268,215,839
[H] Scenario 2 - 1 year X/Xi delay	\$3,397,612	\$27,928,798	\$83,416,742	\$132,341,676	\$105,499,912	\$32,785,303	\$385,370,043

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

- [A]** Per Schedule 2.0.
- [B]** Per Schedule 3.0.
- [C]** Per Schedule 4.0.
- [D]** Per Schedule 5.0.
- [E]** Per Schedule 4.3.
- [F]** Per Schedule 5.2.
- [G]** Per Schedule 16.1.
- [H]** Per Schedule 16.2.

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Scenario 1 - Discounted Lost Profits: In-house Model

Schedule 2.0

	2020	2021	2022	2023	2024	2025	Total
<u>Lost EndoWrist repair units</u>							
[A] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[B] da Vinci X/Xi	7,484	28,822	42,530	49,215	41,711	14,542	184,304
[C] Total	8,805	30,686	43,486	49,662	41,888	14,578	189,105
<u>Lost revenues</u>							
[A] da Vinci S/Si	\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
[B] da Vinci X/Xi	\$10,582,376	\$41,071,350	\$60,902,960	\$70,475,880	\$59,730,152	\$20,824,144	\$263,586,862
[C] Total	\$12,480,653	\$43,776,014	\$62,273,864	\$71,116,878	\$59,983,970	\$20,875,768	\$270,507,147
<u>Incremental costs</u>							
[A] da Vinci S/Si	\$1,145,307	\$1,634,728	\$836,500	\$391,125	\$154,875	\$31,500	\$4,194,035
[B] da Vinci X/Xi	\$6,473,660	\$25,161,606	\$37,213,750	\$43,063,125	\$36,497,125	\$12,724,250	\$161,133,516
[C] Total	\$7,618,967	\$26,796,334	\$38,050,250	\$43,454,250	\$36,652,000	\$12,755,750	\$165,327,551
<u>Lost profits (undiscounted)</u>							
[A] da Vinci S/Si	\$752,970	\$1,069,936	\$534,404	\$249,873	\$98,943	\$20,124	\$2,726,250
[B] da Vinci X/Xi	\$4,108,716	\$15,909,744	\$23,689,210	\$27,412,755	\$23,233,027	\$8,099,894	\$102,453,346
[C] Total	\$4,861,686	\$16,979,680	\$24,223,614	\$27,662,628	\$23,331,970	\$8,120,018	\$105,179,596
[D] Discount %					12%	12%	
[E] Discount period					0.5	1.5	
[F] Discount factor	1.00000	1.00000	1.00000	1.00000	0.94491	0.84367	
[G] Discounted lost profits	\$4,861,686	\$16,979,680	\$24,223,614	\$27,662,628	\$22,046,612	\$6,850,616	\$102,624,836

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 2.1.

[B] Per Schedule 2.1.

[C] = [A] + [B]

[D] For the GICS 35101010, Health Care Equipment & Supplies, Duff and Phelps - Cost of Capital Composite, September 30, 2022, the average SIC/GICS Composite WACC (weighted average cost of capital) is 9.2% and median WACC is 8.9%. For the small composite, the WACC is 11.1% to 11.2% (CRSP Decile). For purposes of my analysis I use 12%, which is conservative. Note: The projections after 2022 do not include growth, therefore the discount rate would likely be less.

[E] Calculated using the mid-year convention to January 1, 2024, the approximate date of trial.

[F] = $(1 + [H])^{-[I]}$, rounded to 5 decimals.

[G] = Lost profits (undiscounted) per [C] * [F]

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Scenario 1 - Undiscounted Lost Profits: In-house Model

Schedule 2.1

		2020	2021	2022	2023	2024	2025	Total
da Vinci S/Si								
[A] Lost EndoWrist repair units		1,321	1,864	956	447	177	36	4,801
Per unit								
[B] Average selling price		\$1,437	\$1,451	\$1,434	\$1,434	\$1,434	\$1,434	\$1,441
Incremental costs per unit								
[C] Repair costs		\$148	\$155	\$156	\$156	\$156	\$156	\$153
[D] Chip costs		\$533	\$533	\$533	\$533	\$533	\$533	\$533
[E] Vizient admin fees - % of sales	4%	\$57	\$58	\$57	\$57	\$57	\$57	\$57
[F] Additional SGA - % of sales	9%	\$129	\$131	\$129	\$129	\$129	\$129	\$130
[G] Total incremental costs		\$867	\$877	\$875	\$875	\$875	\$875	\$874
[H] Lost profits per unit		\$570	\$574	\$559	\$559	\$559	\$559	\$568
[I] Lost revenues		\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
Incremental costs								
[J] Repair costs		\$195,508	\$288,920	\$149,136	\$69,732	\$27,612	\$5,616	\$736,524
[K] Chip costs		\$704,093	\$993,512	\$509,548	\$238,251	\$94,341	\$19,188	\$2,558,933
[L] Vizient admin fees - 4% of sales		\$75,297	\$108,112	\$54,492	\$25,479	\$10,089	\$2,052	\$275,521
[M] Additional SGA - % of sales		\$170,409	\$244,184	\$123,324	\$57,663	\$22,833	\$4,644	\$623,057
[N] Total incremental costs		\$1,145,307	\$1,634,728	\$836,500	\$391,125	\$154,875	\$31,500	\$4,194,035
[O] Lost profits - undiscounted		\$752,970	\$1,069,936	\$534,404	\$249,873	\$98,943	\$20,124	\$2,726,250
da Vinci X/Xi								
[A] Lost EndoWrist repair units		7,484	28,822	42,530	49,215	41,711	14,542	184,304
Per unit								
[B] Average selling price		\$1,414	\$1,425	\$1,432	\$1,432	\$1,432	\$1,432	\$1,430
Incremental costs per unit								
[C] Repair costs		\$148	\$155	\$156	\$156	\$156	\$156	\$156
[D] Chip costs		\$533	\$533	\$533	\$533	\$533	\$533	\$533
[E] Vizient admin fees - % of sales	4%	\$57	\$57	\$57	\$57	\$57	\$57	\$57
[F] Additional SGA - % of sales	9%	\$127	\$128	\$129	\$129	\$129	\$129	\$129
[G] Total incremental costs		\$865	\$873	\$875	\$875	\$875	\$875	\$874
[H] Lost profits per unit		\$549	\$552	\$557	\$557	\$557	\$557	\$556
[I] Lost revenues		\$10,582,376	\$41,071,350	\$60,902,960	\$70,475,880	\$59,730,152	\$20,824,144	\$263,586,862
Incremental costs								
[J] Repair costs		\$1,107,632	\$4,467,410	\$6,634,680	\$7,677,540	\$6,506,916	\$2,268,552	\$28,662,730
[K] Chip costs		\$3,988,972	\$15,362,126	\$22,668,490	\$26,231,595	\$22,231,963	\$7,750,886	\$98,234,032
[L] Vizient admin fees - 4% of sales		\$426,588	\$1,642,854	\$2,424,210	\$2,805,255	\$2,377,527	\$828,894	\$10,505,328
[M] Additional SGA - % of sales		\$950,468	\$3,689,216	\$5,486,370	\$6,348,735	\$5,380,719	\$1,875,918	\$23,731,426
[N] Total incremental costs		\$6,473,660	\$25,161,606	\$37,213,750	\$43,063,125	\$36,497,125	\$12,724,250	\$161,133,516
[O] Lost profits - undiscounted		\$4,108,716	\$15,909,744	\$23,689,210	\$27,412,755	\$23,233,027	\$8,099,894	\$102,453,346

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Scenario 1 - Undiscounted Lost Profits: In-house Model

Schedule 2.1

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 2.2.

[B] Per Schedule 8.0. For purposes of my analysis, the ASP after 2022 is the same as 2022.

[C] Per Schedule 9.0. For purposes of my analysis, the cost per unit after 2022 is the same as 2022.

[D] Per Schedule 10.0.

[E] = [B] * 4%. Per SIS169233-169280 at 238-239, SIS would have paid Vizient a GPO administrative fee of 4% of net sales. Per SIS319315, SIS would have paid Yankee a 3% administrative fee. SIS would not have paid an administrative fee for non-Vizient and non-Yankee customers. For purposes of my analysis, I assume all sales would have been subject to a 4% administrative fee, consistent with the Vizient Agreement.

[F] = [B] * 9% per Schedule 15.1.

[G] = [C] + [D] + [E] + [F]

[H] = [B] - [G]

[I] = [A] * [B]

[J] = [A] * [C]

[K] = [A] * [D]

[L] = [A] * [E]

[M] = [A] * [F]

[N] = [J] + [K] + [L] + [M]

[O] = [I] - [N]

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Scenario 1 - Lost EndoWrist Repair Units

Schedule 2.2

	2020	2021	2022	2023	2024	2025	Total
<u>EndoWrist instruments potentially repairable by SIS - units</u>							
[A] da Vinci S/Si	52,970	22,411	8,214	3,839	1,928	1,077	90,439
[A] da Vinci X/Xi	299,954	346,579	365,304	422,719	455,982	437,186	2,327,724
[A] Total	352,924	368,990	373,518	426,558	457,910	438,263	2,418,163
[B] Expiration rate of new sales units	60%	60%	60%	60%	60%	60%	60%
<u>Expired EndoWrist instrument - units</u>							
[C] da Vinci S/Si	31,782	13,447	4,928	2,303	1,157	646	54,263
[C] da Vinci X/Xi	179,972	207,947	219,182	253,631	273,589	262,312	1,396,633
[C] Total	211,754	221,394	224,110	255,934	274,746	262,958	1,450,896
[D] SIS market share rate	55%	55%	55%	55%	55%	55%	55%
<u>SIS market share units</u>							
[E] da Vinci S/Si	17,480	7,396	2,710	1,267	636	355	29,844
[E] da Vinci X/Xi	98,985	114,371	120,550	139,497	150,474	144,272	768,149
[E] Total	116,465	121,767	123,260	140,764	151,110	144,627	797,993
<u>SIS conversion factor</u>							
[F] da Vinci S/Si	15%	50%	70%	70%	70%	70%	
[F] da Vinci X/Xi	15%	50%	70%	70%	70%	70%	
<u>SIS converted units</u>							
[G] da Vinci S/Si	2,622	3,698	1,897	887	445	249	9,798
[G] da Vinci X/Xi	14,848	57,186	84,385	97,648	105,332	100,990	460,389
[G] Total	17,470	60,884	86,282	98,535	105,777	101,239	470,187
[H] Collection rate of SIS converted units	70%	70%	70%	70%	70%	70%	70%
<u>SIS collected units</u>							
[I] da Vinci S/Si	1,835	2,589	1,328	621	312	174	6,859
[I] da Vinci X/Xi	10,394	40,030	59,070	68,354	73,732	70,693	322,273
[I] Total	12,229	42,619	60,398	68,975	74,044	70,867	329,132
[J] Repair yield of SIS would-have-been units	72%	72%	72%	72%	72%	72%	72%
<u>Would-have-been Lost EndoWrist repair units</u>							
[K] da Vinci S/Si	1,321	1,864	956	447	225	125	4,938
[K] da Vinci X/Xi	7,484	28,822	42,530	49,215	53,087	50,899	232,037
[K] Total	8,805	30,686	43,486	49,662	53,312	51,024	236,975
[L] Market penetration (% of total units)	2%	8%	12%	12%	12%	12%	10%

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Scenario 1 - Lost EndoWrist Repair Units

Schedule 2.2

	2020	2021	2022	2023	2024	2025	Total
<u>Actual conversion rate</u>							
[M] da Vinci S/Si					15%	50%	
[M] da Vinci X/Xi					15%	50%	
<u>Actual EndoWrist repair units</u>							
[N] da Vinci S/Si					48	89	137
[N] da Vinci X/Xi					11,376	36,357	47,733
[N] Total					11,424	36,446	47,870
<u>Lost EndoWrist repair units</u>							
[O] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[O] da Vinci X/Xi	7,484	28,822	42,530	49,215	41,711	14,542	184,304
[O] Total	8,805	30,686	43,486	49,662	41,888	14,578	189,105

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 6.0.

[B] Per Schedule 7.0.

[C] = [A] * [B]

[D] Per <https://web.archive.org/web/20191108191050/https://www.vizientinc.com/what-we-do> as of November 8, 2019, "50% of the nation's acute care providers are Vizient members." Per <https://www.vizientinc.com/> as of November 29, 2022, Vizient has ">60% of acute care hospitals in the U.S." For purposes of my analysis, I use 55%. See discussion in my report.

[E] = [C] * [D]

[F] Per discussion with Keith Johnson and Greg Posdal, SIS anticipated a quick ramp up in 2020, both in sales and in-house repair capabilities. According to Jean Sargent there would have been a transition timeframe conversion for this type of program. In 2020, or Year 1, 30% of Vizient's acute care providers would have reasonably converted. In 2021, or Year 2, and thereafter, 70% would have reasonably converted. I apply a 15% conversion factor in 2020, or Year 1 (i.e. mid-point between 0% January 1 and 30% December 31st). I apply a 50% conversion factor in 2021, or Year 2 (i.e., mid-point between 30% January 1 and 70% December 31st). I apply a 70% conversion factor in 2022, or Year 3, and thereafter. Per May Dep. 113-114 (November 3, 2022), if the Xi had the same security measures as the Si, Restore would have been able to repair the Xi's as of January 2020.

[G] = [E] * [F]

[H] Per Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 604), where Intuitive targets a collection rate of 70%. See *a/so*, Intuitive-00620200 where Intuitive assumes a collection rate of 70%. See *a/so*, Morales 30(b)(6) Dep. Ex. 141 (at pdf page 1), where Intuitive targets a collection rate of 80%. Per discussion with Jean Sargent, I understand for an expensive instrument such as an EndoWrist, a 75% collection rate would be reasonable.

[I] = [G] * [H]

[J] Deposition of Clifton Parker 43-45, 178-179 (October 25, 2022). Per Restore-00094918-00094956 at 922 (Parker Dep. Ex. 121), 215 out of 310 instruments collected in a 2-week sample that had lives on them passed Restore's inspection (i.e., were repairable). Note: Per Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 609), where Intuitive realizes a yield of 85%. See *a/so*, Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 612), where Intuitive targets a yield of 85% to 95%. Schedule 14.0 shows repair yield of SIS collectable units was approximately 88%. For purposes of my analysis, I use 72%.

Scenario 1 - Lost EndoWrist Repair Units

Schedule 2.2

2020	2021	2022	2023	2024	2025	Total
------	------	------	------	------	------	-------

[K] = [I] * [J]

[L] = [K] / [A]

[M] Assuming trial is resolved in or about January 1, 2024, SIS would then begin ramping up. For the Actual EndoWrist repair units, I use the Year 1, Year 2 and Year 3 market conversion rates addressed at [F] above. Currently, I assume Year 1 is 2024 and the first year SIS will begin selling its repair program again. Per May Dep. 60 (November 3, 2022), Restore will have the technical capability to change the usage limitations of the EndoWrist X/Xi's in the third or fourth quarter of 2023. For purposes of this analysis, I assume the conversion rate for the S/Si and X/Xi would be the same starting January 1, 2024.

[N] = [E] * [H] * [J] * [M]

[O] = [K] - [N]

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Scenario 1 - Discounted Lost Profits: Distributor Model

Schedule 3.0

	2020	2021	2022	2023	2024	2025	Total
<u>Lost EndoWrist repair units</u>							
[A] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[B] da Vinci X/Xi	7,484	28,822	42,530	49,215	41,711	14,542	184,304
[C] Total	8,805	30,686	43,486	49,662	41,888	14,578	189,105
<u>Lost revenues</u>							
[A] da Vinci S/Si	\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
[B] da Vinci X/Xi	\$10,582,376	\$41,071,350	\$60,902,960	\$70,475,880	\$59,730,152	\$20,824,144	\$263,586,862
[C] Total	\$12,480,653	\$43,776,014	\$62,273,864	\$71,116,878	\$59,983,970	\$20,875,768	\$270,507,147
<u>Incremental costs</u>							
[A] da Vinci S/Si	\$1,615,583	\$2,287,128	\$1,174,924	\$549,363	\$217,533	\$44,244	\$5,888,775
[B] da Vinci X/Xi	\$9,055,640	\$34,701,688	\$51,418,770	\$59,500,935	\$50,428,599	\$17,581,278	\$222,686,910
[C] Total	\$10,671,223	\$36,988,816	\$52,593,694	\$60,050,298	\$50,646,132	\$17,625,522	\$228,575,685
<u>Lost profits (undiscounted)</u>							
[A] da Vinci S/Si	\$282,694	\$417,536	\$195,980	\$91,635	\$36,285	\$7,380	\$1,031,510
[B] da Vinci X/Xi	\$1,526,736	\$6,369,662	\$9,484,190	\$10,974,945	\$9,301,553	\$3,242,866	\$40,899,952
[C] Total	\$1,809,430	\$6,787,198	\$9,680,170	\$11,066,580	\$9,337,838	\$3,250,246	\$41,931,462
[D] Discount %					12%	12%	
[E] Discount period					0.5	1.5	
[F] Discount factor	1.00000	1.00000	1.00000	1.00000	0.94491	0.84367	
[G] Discounted lost profits	\$1,809,430	\$6,787,198	\$9,680,170	\$11,066,580	\$8,823,417	\$2,742,135	\$40,908,930

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 3.1.

[B] Per Schedule 3.1.

[C] = [A] + [B]

[D] For the GICS 35101010, Health Care Equipment & Supplies, Duff and Phelps - Cost of Capital Composite, September 30, 2022, the average SIC/GICS Composite WACC (weighted average cost of capital) is 9.2% and median WACC is 8.9%. For the small composite, the WACC is 11.1% to 11.2% (CRSP Decile). For purposes of my analysis I use 12%, which is conservative. Note: The projections after 2022 do not include growth, therefore the discount rate would likely be less.

[E] Calculated using the mid-year convention to January 1, 2024, the approximate date of trial.

[F] = $(1 + [H])^{-[I]}$, rounded to 5 decimals.

[G] = Lost profits (undiscounted) per [C] * [F]

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Scenario 1 - Undiscounted Lost Profits: Distributor Model

Schedule 3.1

		2020	2021	2022	2023	2024	2025	Total
da Vinci S/Si								
[A] Lost EndoWrist repair units		1,321	1,864	956	447	177	36	4,801
Per unit								
[B] Average selling price		\$1,437	\$1,451	\$1,434	\$1,434	\$1,434	\$1,434	\$1,441
Incremental costs per unit								
[C] Repair costs (including chip costs)		\$1,037	\$1,038	\$1,043	\$1,043	\$1,043	\$1,043	\$1,039
[D] Vizient admin fees - % of sales	4%	\$57	\$58	\$57	\$57	\$57	\$57	\$57
[E] Additional SGA - % of sales	9%	\$129	\$131	\$129	\$129	\$129	\$129	\$130
[F] Total incremental costs		\$1,223	\$1,227	\$1,229	\$1,229	\$1,229	\$1,229	\$1,227
[G] Lost profits per unit		\$214	\$224	\$205	\$205	\$205	\$205	\$215
[H] Lost revenues		\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
Incremental costs								
[I] Repair costs (including chip costs)		\$1,369,877	\$1,934,832	\$997,108	\$466,221	\$184,611	\$37,548	\$4,990,197
[J] Vizient admin fees - 4% of sales		\$75,297	\$108,112	\$54,492	\$25,479	\$10,089	\$2,052	\$275,521
[K] Additional SGA - % of sales		\$170,409	\$244,184	\$123,324	\$57,663	\$22,833	\$4,644	\$623,057
[L] Total incremental costs		\$1,615,583	\$2,287,128	\$1,174,924	\$549,363	\$217,533	\$44,244	\$5,888,775
[M] Lost profits - undiscounted		\$282,694	\$417,536	\$195,980	\$91,635	\$36,285	\$7,380	\$1,031,510
da Vinci X/Xi								
[A] Lost EndoWrist repair units		7,484	28,822	42,530	49,215	41,711	14,542	184,304
Per unit								
[B] Average selling price		\$1,414	\$1,425	\$1,432	\$1,432	\$1,432	\$1,432	\$1,430
Incremental costs per unit								
[C] Repair costs (including chip costs)		\$1,026	\$1,019	\$1,023	\$1,023	\$1,023	\$1,023	\$1,022
[D] Vizient admin fees - % of sales	4%	\$57	\$57	\$57	\$57	\$57	\$57	\$57
[E] Additional SGA - % of sales	9%	\$127	\$128	\$129	\$129	\$129	\$129	\$129
[F] Total incremental costs		\$1,210	\$1,204	\$1,209	\$1,209	\$1,209	\$1,209	\$1,208
[G] Lost profits per unit		\$204	\$221	\$223	\$223	\$223	\$223	\$222
[H] Lost revenues		\$10,582,376	\$41,071,350	\$60,902,960	\$70,475,880	\$59,730,152	\$20,824,144	\$263,586,862
Incremental costs								
[I] Repair costs (including chip costs)		\$7,678,584	\$29,369,618	\$43,508,190	\$50,346,945	\$42,670,353	\$14,876,466	\$188,450,156
[J] Vizient admin fees - 4% of sales		\$426,588	\$1,642,854	\$2,424,210	\$2,805,255	\$2,377,527	\$828,894	\$10,505,328
[K] Additional SGA - % of sales		\$950,468	\$3,689,216	\$5,486,370	\$6,348,735	\$5,380,719	\$1,875,918	\$23,731,426
[L] Total incremental costs		\$9,055,640	\$34,701,688	\$51,418,770	\$59,500,935	\$50,428,599	\$17,581,278	\$222,686,910
[M] Lost profits - undiscounted		\$1,526,736	\$6,369,662	\$9,484,190	\$10,974,945	\$9,301,553	\$3,242,866	\$40,899,952

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Scenario 1 - Undiscounted Lost Profits: Distributor Model

Schedule 3.1

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 2.2.

[B] Per Schedule 8.0. For purposes of my analysis, the ASP after 2022 is the same as 2022.

[C] Per Schedule 11.0. For purposes of my analysis, the cost per unit after 2022 is the same as 2022.

[D] = [B] * 4%. Per SIS169233-169280 at 238-239, SIS would have paid Vizient a GPO administrative fee of 4% of net sales. Per SIS319315, SIS would have paid Yankee a 3% administrative fee. SIS would not have paid an administrative fee for non-Vizient and non-Yankee customers. For purposes of my analysis, I assume all sales would have been subject to a 4% administrative fee, consistent with the Vizient Agreement.

[E] = [B] * 9% per Schedule 15.1.

[F] = [C] + [D] + [E]

[G] = [B] - [F]

[H] = [A] * [B]

[I] = [A] * [C]

[J] = [A] * [D]

[K] = [A] * [E]

[L] = [I] + [J] + [K]

[M] = [H] - [L]

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Scenario 2 - Discounted Lost Profits: In-house Model (2 Year X/Xi Delay)

Schedule 4.0

	2020	2021	2022	2023	2024	2025	Total
<u>Lost EndoWrist repair units</u>							
[A] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[B] da Vinci X/Xi	0	0	9,114	35,153	41,711	14,542	100,520
[C] Total	1,321	1,864	10,070	35,600	41,888	14,578	105,321
<u>Lost revenues</u>							
[A] da Vinci S/Si	\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
[B] da Vinci X/Xi	\$0	\$0	\$13,051,248	\$50,339,096	\$59,730,152	\$20,824,144	\$143,944,640
[C] Total	\$1,898,277	\$2,704,664	\$14,422,152	\$50,980,094	\$59,983,970	\$20,875,768	\$150,864,925
<u>Incremental costs</u>							
[A] da Vinci S/Si	\$1,145,307	\$1,634,728	\$836,500	\$391,125	\$154,875	\$31,500	\$4,194,035
[B] da Vinci X/Xi	\$0	\$0	\$7,974,750	\$30,758,875	\$36,497,125	\$12,724,250	\$87,955,000
[C] Total	\$1,145,307	\$1,634,728	\$8,811,250	\$31,150,000	\$36,652,000	\$12,755,750	\$92,149,035
<u>Lost profits (undiscounted)</u>							
[A] da Vinci S/Si	\$752,970	\$1,069,936	\$534,404	\$249,873	\$98,943	\$20,124	\$2,726,250
[B] da Vinci X/Xi	\$0	\$0	\$5,076,498	\$19,580,221	\$23,233,027	\$8,099,894	\$55,989,640
[C] Total	\$752,970	\$1,069,936	\$5,610,902	\$19,830,094	\$23,331,970	\$8,120,018	\$58,715,890
[D] Discount %					12%	12%	
[E] Discount period					0.5	1.5	
[F] Discount factor	1.00000	1.00000	1.00000	1.00000	0.94491	0.84367	
[G] Discounted lost profits	\$752,970	\$1,069,936	\$5,610,902	\$19,830,094	\$22,046,612	\$6,850,616	\$56,161,130

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 4.1.

[B] Per Schedule 4.1.

[C] = [A] + [B]

[D] For the GICS 35101010, Health Care Equipment & Supplies, Duff and Phelps - Cost of Capital Composite, September 30, 2022, the average SIC/GICS Composite WACC (weighted average cost of capital) is 9.2% and median WACC is 8.9%. For the small composite, the WACC is 11.1% to 11.2% (CRSP Decile). For purposes of my analysis I use 12%, which is conservative. Note: The projections after 2022 do not include growth, therefore the discount rate would likely be less.

[E] Calculated using the mid-year convention to January 1, 2024, the approximate date of trial.

[F] = $(1 + [H])^{-[I]}$, rounded to 5 decimals.

[G] = Lost profits (undiscounted) per [C] * [F]

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Scenario 2 - Undiscounted Lost Profits: In-house Model (2 Year X/Xi Delay)

Schedule 4.1

		2020	2021	2022	2023	2024	2025	Total
da Vinci S/Si								
[A] Lost EndoWrist repair units		1,321	1,864	956	447	177	36	4,801
Per unit								
[B] Average selling price		\$1,437	\$1,451	\$1,434	\$1,434	\$1,434	\$1,434	\$1,441
Incremental costs per unit								
[C] Repair costs		\$148	\$155	\$156	\$156	\$156	\$156	\$153
[D] Chip costs		\$533	\$533	\$533	\$533	\$533	\$533	\$533
[E] Vizient admin fees - % of sales	4%	\$57	\$58	\$57	\$57	\$57	\$57	\$57
[F] Additional SGA - % of sales	9%	\$129	\$131	\$129	\$129	\$129	\$129	\$130
[G] Total incremental costs		\$867	\$877	\$875	\$875	\$875	\$875	\$874
[H] Lost profits per unit		\$570	\$574	\$559	\$559	\$559	\$559	\$568
[I] Lost revenues		\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
Incremental costs								
[J] Repair costs		\$195,508	\$288,920	\$149,136	\$69,732	\$27,612	\$5,616	\$736,524
[K] Chip costs		\$704,093	\$993,512	\$509,548	\$238,251	\$94,341	\$19,188	\$2,558,933
[L] Vizient admin fees - 4% of sales		\$75,297	\$108,112	\$54,492	\$25,479	\$10,089	\$2,052	\$275,521
[M] Additional SGA - % of sales		\$170,409	\$244,184	\$123,324	\$57,663	\$22,833	\$4,644	\$623,057
[N] Total incremental costs		\$1,145,307	\$1,634,728	\$836,500	\$391,125	\$154,875	\$31,500	\$4,194,035
[O] Lost profits - undiscounted		\$752,970	\$1,069,936	\$534,404	\$249,873	\$98,943	\$20,124	\$2,726,250
da Vinci X/Xi								
[A] Lost EndoWrist repair units		0	0	9,114	35,153	41,711	14,542	100,520
Per unit								
[B] Average selling price		\$1,414	\$1,425	\$1,432	\$1,432	\$1,432	\$1,432	\$1,432
Incremental costs per unit								
[C] Repair costs		\$148	\$155	\$156	\$156	\$156	\$156	\$156
[D] Chip costs		\$533	\$533	\$533	\$533	\$533	\$533	\$533
[E] Vizient admin fees - % of sales	4%	\$57	\$57	\$57	\$57	\$57	\$57	\$57
[F] Additional SGA - % of sales	9%	\$127	\$128	\$129	\$129	\$129	\$129	\$129
[G] Total incremental costs		\$865	\$873	\$875	\$875	\$875	\$875	\$875
[H] Lost profits per unit		\$549	\$552	\$557	\$557	\$557	\$557	\$557
[I] Lost revenues		\$0	\$0	\$13,051,248	\$50,339,096	\$59,730,152	\$20,824,144	\$143,944,640
Incremental costs								
[J] Repair costs		\$0	\$0	\$1,421,784	\$5,483,868	\$6,506,916	\$2,268,552	\$15,681,120
[K] Chip costs		\$0	\$0	\$4,857,762	\$18,736,549	\$22,231,963	\$7,750,886	\$53,577,160
[L] Vizient admin fees - 4% of sales		\$0	\$0	\$519,498	\$2,003,721	\$2,377,527	\$828,894	\$5,729,640
[M] Additional SGA - % of sales		\$0	\$0	\$1,175,706	\$4,534,737	\$5,380,719	\$1,875,918	\$12,967,080
[N] Total incremental costs		\$0	\$0	\$7,974,750	\$30,758,875	\$36,497,125	\$12,724,250	\$87,955,000
[O] Lost profits - undiscounted		\$0	\$0	\$5,076,498	\$19,580,221	\$23,233,027	\$8,099,894	\$55,989,640

Scenario 2 - Undiscounted Lost Profits: In-house Model (2 Year X/Xi Delay)

Schedule 4.1

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 4.2.

[B] Per Schedule 8.0. For purposes of my analysis, the ASP after 2022 is the same as 2022.

[C] Per Schedule 9.0. For purposes of my analysis, the cost per unit after 2022 is the same as 2022.

[D] Per Schedule 10.0.

[E] = [B] * 4%. Per SIS169233-169280 at 238-239, SIS would have paid Vizient a GPO administrative fee of 4% of net sales. Per SIS319315, SIS would have paid Yankee a 3% administrative fee. SIS would not have paid an administrative fee for non-Vizient and non-Yankee customers. For purposes of my analysis, I assume all sales would have been subject to a 4% administrative fee, consistent with the Vizient Agreement.

[F] = [B] * 9% per Schedule 15.1.

[G] = [C] + [D] + [E] + [F]

[H] = [B] - [G]

[I] = [A] * [B]

[J] = [A] * [C]

[K] = [A] * [D]

[L] = [A] * [E]

[M] = [A] * [F]

[N] = [J] + [K] + [L] + [M]

[O] = [I] - [N]

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Scenario 2 - Lost EndoWrist Repair Units (2 Year X/Xi Delay)

Schedule 4.2

	2020	2021	2022	2023	2024	2025	Total
<u>EndoWrist instruments potentially repairable by SIS - units</u>							
[A] da Vinci S/Si	52,970	22,411	8,214	3,839	1,928	1,077	90,439
[A] da Vinci X/Xi	0	0	365,304	422,719	455,982	437,186	1,681,191
[A] Total	52,970	22,411	373,518	426,558	457,910	438,263	1,771,630
[B] Expiration rate of new sales units	60%	60%	60%	60%	60%	60%	60%
<u>Expired EndoWrist instrument - units</u>							
[C] da Vinci S/Si	31,782	13,447	4,928	2,303	1,157	646	54,263
[C] da Vinci X/Xi	0	0	219,182	253,631	273,589	262,312	1,008,714
[C] Total	31,782	13,447	224,110	255,934	274,746	262,958	1,062,977
[D] SIS market share rate	55%	55%	55%	55%	55%	55%	55%
<u>SIS market share units</u>							
[E] da Vinci S/Si	17,480	7,396	2,710	1,267	636	355	29,844
[E] da Vinci X/Xi	0	0	120,550	139,497	150,474	144,272	554,793
[E] Total	17,480	7,396	123,260	140,764	151,110	144,627	584,637
<u>SIS conversion factor</u>							
[F] da Vinci S/Si	15%	50%	70%	70%	70%	70%	
[F] da Vinci X/Xi			15%	50%	70%	70%	
<u>SIS converted units</u>							
[G] da Vinci S/Si	2,622	3,698	1,897	887	445	249	9,798
[G] da Vinci X/Xi	0	0	18,083	69,749	105,332	100,990	294,154
[G] Total	2,622	3,698	19,980	70,636	105,777	101,239	303,952
[H] Collection rate of SIS market share units	70%	70%	70%	70%	70%	70%	70%
<u>SIS collected units</u>							
[I] da Vinci S/Si	1,835	2,589	1,328	621	312	174	6,859
[I] da Vinci X/Xi	0	0	12,658	48,824	73,732	70,693	205,907
[I] Total	1,835	2,589	13,986	49,445	74,044	70,867	212,766
[J] Repair yield of SIS would-have-been units	72%	72%	72%	72%	72%	72%	72%
<u>Would-have-been Lost EndoWrist repair units</u>							
[K] da Vinci S/Si	1,321	1,864	956	447	225	125	4,938
[K] da Vinci X/Xi	0	0	9,114	35,153	53,087	50,899	148,253
[K] Total	1,321	1,864	10,070	35,600	53,312	51,024	153,191
[L] Market penetration (% of total units)	2%	8%	3%	8%	12%	12%	9%

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Scenario 2 - Lost EndoWrist Repair Units (2 Year X/Xi Delay)

Schedule 4.2

	2020	2021	2022	2023	2024	2025	Total
<u>Actual conversion rate</u>							
[M] da Vinci S/Si					15%	50%	
[M] da Vinci X/Xi					15%	50%	
<u>Actual EndoWrist repair units</u>							
[N] da Vinci S/Si					48	89	137
[N] da Vinci X/Xi					11,376	36,357	47,733
[N] Total					11,424	36,446	47,870
<u>Lost EndoWrist repair units</u>							
[O] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[O] da Vinci X/Xi	0	0	9,114	35,153	41,711	14,542	100,520
[O] Total	1,321	1,864	10,070	35,600	41,888	14,578	105,321

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 6.0. Note: Per Parker Dep. 143-144 (October 25, 2022), in a but for world (a world without Intuitive's anticompetitive behaviors), Restore would have begun repairing X/Xi EndoWrists by January 2022. For purposes of my analysis, I assume X/Xi EndoWrist repairs start on January 1, 2022.

[B] Per Schedule 7.0.

[C] = [A] * [B]

[D] Per <https://web.archive.org/web/20191108191050/https://www.vizientinc.com/what-we-do> as of November 8, 2019, "50% of the nation's acute care providers are Vizient members." Per <https://www.vizientinc.com/> as of November 29, 2022, Vizient has ">60% of acute care hospitals in the U.S." For purposes of my analysis, I use 55%. See discussion in my report.

[E] = [C] * [D]

[F] Per discussion with Jean Sargent, I understand the conversion rate would have been at 30% at the end of year 1, 70% at the end of year 2 and 70% thereafter, recognizing SIS would not have gotten all hospitals. For purposes of my analysis, I use an average of 15% in year 1, 50% in year 2 and 70% thereafter. Also, per discussions with Greg Posdal and Keith Johnson, I understand SIS believed its ramp up period would have been one year.

[G] = [E] * [F]

[H] Per Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 604), where Intuitive targets a collection rate of 70%. See also, Intuitive-00620200 where Intuitive assumes a collection rate of 70%. See also, Morales 30(b)(6) Dep. Ex. 141 (at pdf page 1), where Intuitive targets a collection rate of 80%. Per discussion with Jean Sargent, I understand for an expensive instrument such as an EndoWrist, a 75% collection rate would be reasonable.

[I] = [G] * [H]

[J] Deposition of Clifton Parker 43-45, 178-179 (October 25, 2022). Per Restore-00094918-00094956 at 922 (Parker Dep. Ex. 121), 215 out of 310 instruments collected in a 2-week sample that had lives on them passed Restore's inspection (i.e., were repairable). Note: Per Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 609), where Intuitive realizes a yield of 85%. See also, Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 612), where Intuitive targets a yield of 85% to 95%. Schedule 14.0 shows repair yield of SIS collectable units was approximately 88%. For purposes of my analysis, I use 72%.

Scenario 2 - Lost EndoWrist Repair Units (2 Year X/Xi Delay)

Schedule 4.2

2020	2021	2022	2023	2024	2025	Total
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[K] = [I] * [J]

[L] = [K] / [A]

[M] Assuming trial is resolved in or about January 1, 2024, SIS would then begin ramping up. For the Actual EndoWrist repair units, I use the Year 1, Year 2 and Year 3 market conversion rates addressed at [F] above. Currently, I assume Year 1 is 2024 and the first year SIS will begin selling its repair program again. Per May Dep. 60 (November 3, 2022), Restore will have the technical capability to change the usage limitations of the EndoWrist X/Xi's in the third or fourth quarter of 2023. For purposes of this analysis, I assume the conversion rate for the S/Si and X/Xi would be the same starting January 1, 2024.

[N] = [E] * [H] * [J] * [M]

[O] = [K] - [N]

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Scenario 2 - Discounted Lost Profits: In-house Model (1 Year X/Xi Delay)

Schedule 4.3

	2020	2021	2022	2023	2024	2025	Total
<u>Lost EndoWrist repair units</u>							
[A] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[B] da Vinci X/Xi	0	8,646	30,379	49,215	41,711	14,542	144,493
[C] Total	1,321	10,510	31,335	49,662	41,888	14,578	149,294
<u>Lost revenues</u>							
[A] da Vinci S/Si	\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
[B] da Vinci X/Xi	\$0	\$12,320,550	\$43,502,728	\$70,475,880	\$59,730,152	\$20,824,144	\$206,853,454
[C] Total	\$1,898,277	\$15,025,214	\$44,873,632	\$71,116,878	\$59,983,970	\$20,875,768	\$213,773,739
<u>Incremental costs</u>							
[A] da Vinci S/Si	\$1,145,307	\$1,634,728	\$836,500	\$391,125	\$154,875	\$31,500	\$4,194,035
[B] da Vinci X/Xi	\$0	\$7,547,958	\$26,581,625	\$43,063,125	\$36,497,125	\$12,724,250	\$126,414,083
[C] Total	\$1,145,307	\$9,182,686	\$27,418,125	\$43,454,250	\$36,652,000	\$12,755,750	\$130,608,118
<u>Lost profits (undiscounted)</u>							
[A] da Vinci S/Si	\$752,970	\$1,069,936	\$534,404	\$249,873	\$98,943	\$20,124	\$2,726,250
[B] da Vinci X/Xi	\$0	\$4,772,592	\$16,921,103	\$27,412,755	\$23,233,027	\$8,099,894	\$80,439,371
[C] Total	\$752,970	\$5,842,528	\$17,455,507	\$27,662,628	\$23,331,970	\$8,120,018	\$83,165,621
[D] Discount %					12%	12%	
[E] Discount period					0.5	1.5	
[F] Discount factor	1.00000	1.00000	1.00000	1.00000	0.94491	0.84367	
[G] Discounted lost profits	\$752,970	\$5,842,528	\$17,455,507	\$27,662,628	\$22,046,612	\$6,850,616	\$80,610,861

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 4.4.

[B] Per Schedule 4.4.

[C] = [A] + [B]

[D] For the GICS 35101010, Health Care Equipment & Supplies, Duff and Phelps - Cost of Capital Composite, September 30, 2022, the average WACC (weighted average cost of capital) is 9.2% and median WACC is 8.9%. For the small composite, the WACC is 11.1% to 11.2% (CRSP Decile). For purposes of my analysis I use 12%, which is conservative. Note: The projections after 2022 do not include growth, therefore the discount rate would likely be less.

[E] Calculated using the mid-year convention to January 1, 2024, the approximate date of trial.

[F] = $(1 + [H])^{-[I]}$, rounded to 5 decimals.

[G] = Lost profits (undiscounted) per [C] * [F]

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Scenario 2 - Undiscounted Lost Profits: In-house Model (1 Year X/Xi Delay)

Schedule 4.4

		2020	2021	2022	2023	2024	2025	Total
da Vinci S/Si								
[A] Lost EndoWrist repair units		1,321	1,864	956	447	177	36	4,801
Per unit								
[B] Average selling price		\$1,437	\$1,451	\$1,434	\$1,434	\$1,434	\$1,434	\$1,441
Incremental costs per unit								
[C] Repair costs		\$148	\$155	\$156	\$156	\$156	\$156	\$153
[D] Chip costs		\$533	\$533	\$533	\$533	\$533	\$533	\$533
[E] Vizient admin fees - % of sales	4%	\$57	\$58	\$57	\$57	\$57	\$57	\$57
[F] Additional SGA - % of sales	9%	\$129	\$131	\$129	\$129	\$129	\$129	\$130
[G] Total incremental costs		\$867	\$877	\$875	\$875	\$875	\$875	\$874
[H] Lost profits per unit		\$570	\$574	\$559	\$559	\$559	\$559	\$568
[I] Lost revenues		\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
Incremental costs								
[J] Repair costs		\$195,508	\$288,920	\$149,136	\$69,732	\$27,612	\$5,616	\$736,524
[K] Chip costs		\$704,093	\$993,512	\$509,548	\$238,251	\$94,341	\$19,188	\$2,558,933
[L] Vizient admin fees - 4% of sales		\$75,297	\$108,112	\$54,492	\$25,479	\$10,089	\$2,052	\$275,521
[M] Additional SGA - % of sales		\$170,409	\$244,184	\$123,324	\$57,663	\$22,833	\$4,644	\$623,057
[N] Total incremental costs		\$1,145,307	\$1,634,728	\$836,500	\$391,125	\$154,875	\$31,500	\$4,194,035
[O] Lost profits - undiscounted		\$752,970	\$1,069,936	\$534,404	\$249,873	\$98,943	\$20,124	\$2,726,250
da Vinci X/Xi								
[A] Lost EndoWrist repair units		0	8,646	30,379	49,215	41,711	14,542	144,493
Per unit								
[B] Average selling price		\$1,414	\$1,425	\$1,432	\$1,432	\$1,432	\$1,432	\$1,432
Incremental costs per unit								
[C] Repair costs		\$148	\$155	\$156	\$156	\$156	\$156	\$156
[D] Chip costs		\$533	\$533	\$533	\$533	\$533	\$533	\$533
[E] Vizient admin fees - % of sales	4%	\$57	\$57	\$57	\$57	\$57	\$57	\$57
[F] Additional SGA - % of sales	9%	\$127	\$128	\$129	\$129	\$129	\$129	\$129
[G] Total incremental costs		\$865	\$873	\$875	\$875	\$875	\$875	\$875
[H] Lost profits per unit		\$549	\$552	\$557	\$557	\$557	\$557	\$557
[I] Lost revenues		\$0	\$12,320,550	\$43,502,728	\$70,475,880	\$59,730,152	\$20,824,144	\$206,853,454
Incremental costs								
[J] Repair costs		\$0	\$1,340,130	\$4,739,124	\$7,677,540	\$6,506,916	\$2,268,552	\$22,532,262
[K] Chip costs		\$0	\$4,608,318	\$16,192,007	\$26,231,595	\$22,231,963	\$7,750,886	\$77,014,769
[L] Vizient admin fees - 4% of sales		\$0	\$492,822	\$1,731,603	\$2,805,255	\$2,377,527	\$828,894	\$8,236,101
[M] Additional SGA - % of sales		\$0	\$1,106,688	\$3,918,891	\$6,348,735	\$5,380,719	\$1,875,918	\$18,630,951
[N] Total incremental costs		\$0	\$7,547,958	\$26,581,625	\$43,063,125	\$36,497,125	\$12,724,250	\$126,414,083
[O] Lost profits - undiscounted		\$0	\$4,772,592	\$16,921,103	\$27,412,755	\$23,233,027	\$8,099,894	\$80,439,371

Scenario 2 - Undiscounted Lost Profits: In-house Model (1 Year X/Xi Delay)

Schedule 4.4

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 4.2.

[B] Per Schedule 8.0. For purposes of my analysis, the ASP after 2022 is the same as 2022.

[C] Per Schedule 9.0. For purposes of my analysis, the cost per unit after 2022 is the same as 2022.

[D] Per Schedule 10.0.

[E] = [B] * 4%. Per SIS169233-169280 at 238-239, SIS would have paid Vizient a GPO administrative fee of 4% of net sales. Per SIS319315, SIS would have paid Yankee a 3% administrative fee. SIS would not have paid an administrative fee for non-Vizient and non-Yankee customers. For purposes of my analysis, I assume all sales would have been subject to a 4% administrative fee, consistent with the Vizient Agreement.

[F] = [B] * 9% per Schedule 15.1.

[G] = [C] + [D] + [E] + [F]

[H] = [B] - [G]

[I] = [A] * [B]

[J] = [A] * [C]

[K] = [A] * [D]

[L] = [A] * [E]

[M] = [A] * [F]

[N] = [J] + [K] + [L] + [M]

[O] = [I] - [N]

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Scenario 2 - Lost EndoWrist Repair Units (1 Year X/Xi Delay)

Schedule 4.5

	2020	2021	2022	2023	2024	2025	Total
<u>EndoWrist instruments potentially repairable by SIS - units</u>							
[A] da Vinci S/Si	52,970	22,411	8,214	3,839	1,928	1,077	90,439
[A] da Vinci X/Xi	0	346,579	365,304	422,719	455,982	437,186	2,027,770
[A] Total	52,970	368,990	373,518	426,558	457,910	438,263	2,118,209
[B] Expiration rate of new sales units	60%	60%	60%	60%	60%	60%	60%
<u>Expired EndoWrist instrument - units</u>							
[C] da Vinci S/Si	31,782	13,447	4,928	2,303	1,157	646	54,263
[C] da Vinci X/Xi	0	207,947	219,182	253,631	273,589	262,312	1,216,661
[C] Total	31,782	221,394	224,110	255,934	274,746	262,958	1,270,924
[D] SIS market share rate	55%	55%	55%	55%	55%	55%	55%
<u>SIS market share units</u>							
[E] da Vinci S/Si	17,480	7,396	2,710	1,267	636	355	29,844
[E] da Vinci X/Xi	0	114,371	120,550	139,497	150,474	144,272	669,164
[E] Total	17,480	121,767	123,260	140,764	151,110	144,627	699,008
<u>SIS conversion factor</u>							
[F] da Vinci S/Si	15%	50%	70%	70%	70%	70%	
[F] da Vinci X/Xi		15%	50%	70%	70%	70%	
<u>SIS converted units</u>							
[G] da Vinci S/Si	2,622	3,698	1,897	887	445	249	9,798
[G] da Vinci X/Xi	0	17,156	60,275	97,648	105,332	100,990	381,401
[G] Total	2,622	20,854	62,172	98,535	105,777	101,239	391,199
[H] Collection rate of SIS market share units	70%	70%	70%	70%	70%	70%	70%
<u>SIS collected units</u>							
[I] da Vinci S/Si	1,835	2,589	1,328	621	312	174	6,859
[I] da Vinci X/Xi	0	12,009	42,193	68,354	73,732	70,693	266,981
[I] Total	1,835	14,598	43,521	68,975	74,044	70,867	273,840
[J] Repair yield of SIS would-have-been units	72%	72%	72%	72%	72%	72%	72%
<u>Would-have-been Lost EndoWrist repair units</u>							
[K] da Vinci S/Si	1,321	1,864	956	447	225	125	4,938
[K] da Vinci X/Xi	0	8,646	30,379	49,215	53,087	50,899	192,226
[K] Total	1,321	10,510	31,335	49,662	53,312	51,024	197,164
[L] Market penetration (% of total units)	2%	3%	8%	12%	12%	12%	9%

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Scenario 2 - Lost EndoWrist Repair Units (1 Year X/Xi Delay)

Schedule 4.5

	2020	2021	2022	2023	2024	2025	Total
Actual conversion rate							
[M] da Vinci S/Si					15%	50%	
[M] da Vinci X/Xi					15%	50%	
Actual EndoWrist repair units							
[N] da Vinci S/Si					48	89	137
[N] da Vinci X/Xi					11,376	36,357	47,733
[N] Total					11,424	36,446	47,870
Lost EndoWrist repair units							
[O] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[O] da Vinci X/Xi	0	8,646	30,379	49,215	41,711	14,542	144,493
[O] Total	1,321	10,510	31,335	49,662	41,888	14,578	149,294

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 6.0. Note: Marcus Engineering proposed a statement of work to Restore in late June 2019 for circumventing the X/Xi encryption and resetting the X/Xi EndoWrist use counter. I understand Marcus Engineering's efforts "have been successful in many of the aspects" of "reverse engineering on the Xi[.]" Based on progress as of November 2022, Restore anticipates that it will have the technical ability to reset the X/Xi EndoWrist use counter in "the third and fourth quarter, 2023." See May Dep. 40 and 60-61 (November 3, 2022) and May Dep. Exhibit 155. For purposes of my analysis, I assume X/Xi EndoWrist repairs start on January 1, 2021.

[B] Per Schedule 7.0.

[C] = [A] * [B]

[D] Per <https://web.archive.org/web/20191108191050/https://www.vizientinc.com/what-we-do> as of November 8, 2019, "50% of the nation's acute care providers are Vizient members." Per <https://www.vizientinc.com/> as of November 29, 2022, Vizient has ">60% of acute care hospitals in the U.S." For purposes of my analysis, I use 55%. See discussion in my report.

[E] = [C] * [D]

[F] Per discussion with Jean Sargent, I understand the conversion rate would have been at 30% at the end of year 1, 70% at the end of year 2 and 70% thereafter, recognizing SIS would not have gotten all hospitals. For purposes of my analysis, I use an average of 15% in year 1, 50% in year 2 and 70% thereafter. Also, per discussions with Greg Posdal and Keith Johnson, I understand SIS believed its ramp up period would have been one year.

[G] = [E] * [F]

[H] Per Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 604), where Intuitive targets a collection rate of 70%. See *a/so*, Intuitive-00620200 where Intuitive assumes a collection rate of 70%. See *a/so*, Morales 30(b)(6) Dep. Ex. 141 (at pdf page 1), where Intuitive targets a collection rate of 80%. Per discussion with Jean Sargent, I understand for an expensive instrument such as an EndoWrist, a 75% collection rate would be reasonable.

[I] = [G] * [H]

Scenario 2 - Lost EndoWrist Repair Units (1 Year X/Xi Delay)

Schedule 4.5

2020	2021	2022	2023	2024	2025	Total
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[J] Deposition of Clifton Parker 43-45, 178-179 (October 25, 2022). Per Restore-00094918-00094956 at 922 (Parker Dep. Ex. 121), 215 out of 310 instruments collected in a 2-week sample that had lives on them passed Restore’s inspection (i.e., were repairable). Note: Per Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 609), where Intuitive realizes a yield of 85%. See *also*, Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597-626616 at 612), where Intuitive targets a yield of 85% to 95%. Schedule 14.0 shows repair yield of SIS collectable units was approximately 88%. For purposes of my analysis, I use 72%.

[K] = [I] * [J]

[L] = [K] / [A]

[M] Assuming trial is resolved in or about January 1, 2024, SIS would then begin ramping up. For the Actual EndoWrist repair units, I use the Year 1, Year 2 and Year 3 market conversion rates addressed at [F] above. Currently, I assume Year 1 is 2024 and the first year SIS will begin selling its repair program again. Per May Dep. 60 (November 3, 2022), Restore will have the technical capability to change the usage limitations of the EndoWrist X/Xi's in the third or fourth quarter of 2023. For purposes of this analysis, I assume the conversion rate for the S/Si and X/Xi would be the same starting January 1, 2024.

[N] = [E] * [H] * [J] * [M]

[O] = [K] - [N]

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Scenario 2 - Discounted Lost Profits: Distributor Model (2 Year X/Xi Delay)

Schedule 5.0

	2020	2021	2022	2023	2024	2025	Total
<u>Lost EndoWrist repair units</u>							
[A] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[B] da Vinci X/Xi	0	0	9,114	35,153	41,711	14,542	100,520
[C] Total	1,321	1,864	10,070	35,600	41,888	14,578	105,321
<u>Lost revenues</u>							
[A] da Vinci S/Si	\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
[B] da Vinci X/Xi	\$0	\$0	\$13,051,248	\$50,339,096	\$59,730,152	\$20,824,144	\$143,944,640
[C] Total	\$1,898,277	\$2,704,664	\$14,422,152	\$50,980,094	\$59,983,970	\$20,875,768	\$150,864,925
<u>Incremental costs</u>							
[A] da Vinci S/Si	\$1,615,583	\$2,287,128	\$1,174,924	\$549,363	\$217,533	\$44,244	\$5,888,775
[B] da Vinci X/Xi	\$0	\$0	\$11,018,826	\$42,499,977	\$50,428,599	\$17,581,278	\$121,528,680
[C] Total	\$1,615,583	\$2,287,128	\$12,193,750	\$43,049,340	\$50,646,132	\$17,625,522	\$127,417,455
<u>Lost profits (undiscounted)</u>							
[A] da Vinci S/Si	\$282,694	\$417,536	\$195,980	\$91,635	\$36,285	\$7,380	\$1,031,510
[B] da Vinci X/Xi	\$0	\$0	\$2,032,422	\$7,839,119	\$9,301,553	\$3,242,866	\$22,415,960
[C] Total	\$282,694	\$417,536	\$2,228,402	\$7,930,754	\$9,337,838	\$3,250,246	\$23,447,470
[D] Discount %					12%	12%	
[E] Discount period					0.5	1.5	
[F] Discount factor	1.00000	1.00000	1.00000	1.00000	0.94491	0.84367	
[G] Discounted lost profits	\$282,694	\$417,536	\$2,228,402	\$7,930,754	\$8,823,417	\$2,742,135	\$22,424,938

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 5.1.

[B] Per Schedule 5.1.

[C] = [A] + [B]

[D] For the GICS 35101010, Health Care Equipment & Supplies, Duff and Phelps - Cost of Capital Composite, September 30, 2022, the average SIC/GICS Composite WACC (weighted average cost of capital) is 9.2% and median WACC is 8.9%. For the small composite, the WACC is 11.1% to 11.2% (CRSP Decile). For purposes of my analysis I use 12%, which is conservative. Note: The projections after 2022 do not include growth, therefore the discount rate would likely be less.

[E] Calculated using the mid-year convention to January 1, 2024, the approximate date of trial.

[F] = $(1 + [H])^{-[I]}$, rounded to 5 decimals.

[G] = Lost profits (undiscounted) per [C] * [F]

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Scenario 2 - Undiscounted Lost Profits: Distributor Model (2 Year X/Xi Delay)

Schedule 5.1

		2020	2021	2022	2023	2024	2025	Total
da Vinci S/Si								
[A] Lost EndoWrist repair units		1,321	1,864	956	447	177	36	4,801
Per unit								
[B] Average selling price		\$1,437	\$1,451	\$1,434	\$1,434	\$1,434	\$1,434	\$1,441
Incremental costs per unit								
[C] Repair costs (including chip costs)		\$1,037	\$1,038	\$1,043	\$1,043	\$1,043	\$1,043	\$1,039
[D] Vizient admin fees - % of sales	4%	\$57	\$58	\$57	\$57	\$57	\$57	\$57
[E] Additional SGA - % of sales	9%	\$129	\$131	\$129	\$129	\$129	\$129	\$130
[F] Total incremental costs		\$1,223	\$1,227	\$1,229	\$1,229	\$1,229	\$1,229	\$1,227
[G] Lost profits per unit		\$214	\$224	\$205	\$205	\$205	\$205	\$215
[H] Lost revenues		\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
Incremental costs								
[I] Repair costs (including chip costs)		\$1,369,877	\$1,934,832	\$997,108	\$466,221	\$184,611	\$37,548	\$4,990,197
[J] Vizient admin fees - 4% of sales		\$75,297	\$108,112	\$54,492	\$25,479	\$10,089	\$2,052	\$275,521
[K] Additional SGA - % of sales		\$170,409	\$244,184	\$123,324	\$57,663	\$22,833	\$4,644	\$623,057
[L] Total incremental costs		\$1,615,583	\$2,287,128	\$1,174,924	\$549,363	\$217,533	\$44,244	\$5,888,775
[M] Lost profits - undiscounted		\$282,694	\$417,536	\$195,980	\$91,635	\$36,285	\$7,380	\$1,031,510
da Vinci X/Xi								
[A] Lost EndoWrist repair units		0	0	9,114	35,153	41,711	14,542	100,520
Per unit								
[B] Average selling price		\$1,414	\$1,425	\$1,432	\$1,432	\$1,432	\$1,432	\$1,432
Incremental costs per unit								
[C] Repair costs (including chip costs)		\$1,026	\$1,019	\$1,023	\$1,023	\$1,023	\$1,023	\$1,023
[D] Vizient admin fees - % of sales	4%	\$57	\$57	\$57	\$57	\$57	\$57	\$57
[E] Additional SGA - % of sales	9%	\$127	\$128	\$129	\$129	\$129	\$129	\$129
[F] Total incremental costs		\$1,210	\$1,204	\$1,209	\$1,209	\$1,209	\$1,209	\$1,209
[G] Lost profits per unit		\$204	\$221	\$223	\$223	\$223	\$223	\$223
[H] Lost revenues		\$0	\$0	\$13,051,248	\$50,339,096	\$59,730,152	\$20,824,144	\$143,944,640
Incremental costs								
[I] Repair costs (including chip costs)		\$0	\$0	\$9,323,622	\$35,961,519	\$42,670,353	\$14,876,466	\$102,831,960
[J] Vizient admin fees - 4% of sales		\$0	\$0	\$519,498	\$2,003,721	\$2,377,527	\$828,894	\$5,729,640
[K] Additional SGA - % of sales		\$0	\$0	\$1,175,706	\$4,534,737	\$5,380,719	\$1,875,918	\$12,967,080
[L] Total incremental costs		\$0	\$0	\$11,018,826	\$42,499,977	\$50,428,599	\$17,581,278	\$121,528,680
[M] Lost profits - undiscounted		\$0	\$0	\$2,032,422	\$7,839,119	\$9,301,553	\$3,242,866	\$22,415,960

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Scenario 2 - Undiscounted Lost Profits: Distributor Model (2 Year X/Xi Delay) Schedule 5.1

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 4.2.

[B] Per Schedule 8.0. For purposes of my analysis, the ASP after 2022 is the same as 2022.

[C] Per Schedule 11.0. For purposes of my analysis, the cost per unit after 2022 is the same as 2022.

[D] = [B] * 4%. Per SIS169233-169280 at 238-239, SIS would have paid Vizient a GPO administrative fee of 4% of net sales. Per SIS319315, SIS would have paid Yankee a 3% administrative fee. SIS would not have paid an administrative fee for non-Vizient and non-Yankee customers. For purposes of my analysis, I assume all sales would have been subject to a 4% administrative fee, consistent with the Vizient Agreement.

[E] = [B] * 9% per Schedule 15.1.

[F] = [C] + [D] + [E]

[G] = [B] - [F]

[H] = [A] * [B]

[I] = [A] * [C]

[J] = [A] * [D]

[K] = [A] * [E]

[L] = [I] + [J] + [K]

[M] = [H] - [L]

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Scenario 2 - Discounted Lost Profits: Distributor Model (1 Year X/Xi Delay)

Schedule 5.2

	2020	2021	2022	2023	2024	2025	Total
<u>Lost EndoWrist repair units</u>							
[A] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[B] da Vinci X/Xi	0	8,646	30,379	49,215	41,711	14,542	144,493
[C] Total	1,321	10,510	31,335	49,662	41,888	14,578	149,294
<u>Lost revenues</u>							
[A] da Vinci S/Si	\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
[B] da Vinci X/Xi	\$0	\$12,320,550	\$43,502,728	\$70,475,880	\$59,730,152	\$20,824,144	\$206,853,454
[C] Total	\$1,898,277	\$15,025,214	\$44,873,632	\$71,116,878	\$59,983,970	\$20,875,768	\$213,773,739
<u>Incremental costs</u>							
[A] da Vinci S/Si	\$1,615,583	\$2,287,128	\$1,174,924	\$549,363	\$217,533	\$44,244	\$5,888,775
[B] da Vinci X/Xi	\$0	\$10,409,784	\$36,728,211	\$59,500,935	\$50,428,599	\$17,581,278	\$174,648,807
[C] Total	\$1,615,583	\$12,696,912	\$37,903,135	\$60,050,298	\$50,646,132	\$17,625,522	\$180,537,582
<u>Lost profits (undiscounted)</u>							
[A] da Vinci S/Si	\$282,694	\$417,536	\$195,980	\$91,635	\$36,285	\$7,380	\$1,031,510
[B] da Vinci X/Xi	\$0	\$1,910,766	\$6,774,517	\$10,974,945	\$9,301,553	\$3,242,866	\$32,204,647
[C] Total	\$282,694	\$2,328,302	\$6,970,497	\$11,066,580	\$9,337,838	\$3,250,246	\$33,236,157
[D] Discount %					12%	12%	
[E] Discount period					0.5	1.5	
[F] Discount factor	1.00000	1.00000	1.00000	1.00000	0.94491	0.84367	
[G] Discounted lost profits	\$282,694	\$2,328,302	\$6,970,497	\$11,066,580	\$8,823,417	\$2,742,135	\$32,213,625

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 5.3.

[B] Per Schedule 5.3.

[C] = [A] + [B]

[D] For the GICS 35101010, Health Care Equipment & Supplies, Duff and Phelps - Cost of Capital Composite, September 30, 2022, the average WACC (weighted average cost of capital) is 9.2% and median WACC is 8.9%. For the small composite, the WACC is 11.1% to 11.2% (CRSP Decile). For purposes of my analysis I use 12%, which is conservative. Note: The projections after 2022 do not include growth, therefore the discount rate would likely be less.

[E] Calculated using the mid-year convention to January 1, 2024, the approximate date of trial.

[F] = $(1 + [H])^{-[I]}$, rounded to 5 decimals.

[G] = Lost profits (undiscounted) per [C] * [F]

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Scenario 2 - Undiscounted Lost Profits: Distributor Model (1 Year X/Xi Delay)

Schedule 5.3

		2020	2021	2022	2023	2024	2025	Total
da Vinci S/Si								
[A] Lost EndoWrist repair units		1,321	1,864	956	447	177	36	4,801
Per unit								
[B] Average selling price		\$1,437	\$1,451	\$1,434	\$1,434	\$1,434	\$1,434	\$1,441
Incremental costs per unit								
[C] Repair costs (including chip costs)		\$1,037	\$1,038	\$1,043	\$1,043	\$1,043	\$1,043	\$1,039
[D] Vizient admin fees - % of sales	4%	\$57	\$58	\$57	\$57	\$57	\$57	\$57
[E] Additional SGA - % of sales	9%	\$129	\$131	\$129	\$129	\$129	\$129	\$130
[F] Total incremental costs		\$1,223	\$1,227	\$1,229	\$1,229	\$1,229	\$1,229	\$1,227
[G] Lost profits per unit		\$214	\$224	\$205	\$205	\$205	\$205	\$215
[H] Lost revenues		\$1,898,277	\$2,704,664	\$1,370,904	\$640,998	\$253,818	\$51,624	\$6,920,285
Incremental costs								
[I] Repair costs (including chip costs)		\$1,369,877	\$1,934,832	\$997,108	\$466,221	\$184,611	\$37,548	\$4,990,197
[J] Vizient admin fees - 4% of sales		\$75,297	\$108,112	\$54,492	\$25,479	\$10,089	\$2,052	\$275,521
[K] Additional SGA - % of sales		\$170,409	\$244,184	\$123,324	\$57,663	\$22,833	\$4,644	\$623,057
[L] Total incremental costs		\$1,615,583	\$2,287,128	\$1,174,924	\$549,363	\$217,533	\$44,244	\$5,888,775
[M] Lost profits - undiscounted		\$282,694	\$417,536	\$195,980	\$91,635	\$36,285	\$7,380	\$1,031,510
da Vinci X/Xi								
[A] Lost EndoWrist repair units		0	8,646	30,379	49,215	41,711	14,542	144,493
Per unit								
[B] Average selling price		\$1,414	\$1,425	\$1,432	\$1,432	\$1,432	\$1,432	\$1,432
Incremental costs per unit								
[C] Repair costs (including chip costs)		\$1,026	\$1,019	\$1,023	\$1,023	\$1,023	\$1,023	\$1,023
[D] Vizient admin fees - % of sales	4%	\$57	\$57	\$57	\$57	\$57	\$57	\$57
[E] Additional SGA - % of sales	9%	\$127	\$128	\$129	\$129	\$129	\$129	\$129
[F] Total incremental costs		\$1,210	\$1,204	\$1,209	\$1,209	\$1,209	\$1,209	\$1,209
[G] Lost profits per unit		\$204	\$221	\$223	\$223	\$223	\$223	\$223
[H] Lost revenues		\$0	\$12,320,550	\$43,502,728	\$70,475,880	\$59,730,152	\$20,824,144	\$206,853,454
Incremental costs								
[I] Repair costs (including chip costs)		\$0	\$8,810,274	\$31,077,717	\$50,346,945	\$42,670,353	\$14,876,466	\$147,781,755
[J] Vizient admin fees - 4% of sales		\$0	\$492,822	\$1,731,603	\$2,805,255	\$2,377,527	\$828,894	\$8,236,101
[K] Additional SGA - % of sales		\$0	\$1,106,688	\$3,918,891	\$6,348,735	\$5,380,719	\$1,875,918	\$18,630,951
[L] Total incremental costs		\$0	\$10,409,784	\$36,728,211	\$59,500,935	\$50,428,599	\$17,581,278	\$174,648,807
[M] Lost profits - undiscounted		\$0	\$1,910,766	\$6,774,517	\$10,974,945	\$9,301,553	\$3,242,866	\$32,204,647

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Scenario 2 - Undiscounted Lost Profits: Distributor Model (1 Year X/Xi Delay) Schedule 5.3

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 4.5.

[B] Per Schedule 8.0. For purposes of my analysis, the ASP after 2022 is the same as 2022.

[C] Per Schedule 11.0. For purposes of my analysis, the cost per unit after 2022 is the same as 2022.

[D] = [B] * 4%. Per SIS169233-169280 at 238-239, SIS would have paid Vizient a GPO administrative fee of 4% of net sales. Per SIS319315, SIS would have paid Yankee a 3% administrative fee. SIS would not have paid an administrative fee for non-Vizient and non-Yankee customers. For purposes of my analysis, I assume all sales would have been subject to a 4% administrative fee, consistent with the Vizient Agreement.

[E] = [B] * 9% per Schedule 15.1.

[F] = [C] + [D] + [E]

[G] = [B] - [F]

[H] = [A] * [B]

[I] = [A] * [C]

[J] = [A] * [D]

[K] = [A] * [E]

[L] = [I] + [J] + [K]

[M] = [H] - [L]

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Intuitive's U.S. EndoWrist Instrument Units - Actual and Forecasted: 2014 - 2025
Schedule 6.0

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2020-2021 decline
Actual EndoWrist instrument units													
[A] da Vinci S/Si													
[A] da Vinci X/Xi													
[A] da Vinci Xi 2.0/Xi R													
[A] Total													
% share of units by system													
[B] da Vinci S/Si	95.0%	81.4%	70.0%	57.2%	43.2%	28.2%	15.0%	6.1%	2.2%				
[B] da Vinci X/Xi	5.0%	18.6%	30.0%	42.8%	56.8%	71.8%	85.0%	93.9%	97.8%				
[B] da Vinci Xi 2.0/Xi R	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
[B] Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%				
Projected % of units by system													
[C] da Vinci S/Si										0.9%	0.4%	0.2%	
[C] da Vinci X/Xi										99.1%	94.6%	81.2%	
[C] da Vinci Xi 2.0/Xi R										0.0%	5.0%	18.6%	
										100.0%	100.0%	100.0%	
[D] Expected growth in procedures													
Forecasted EndoWrist instrument units													
[E] da Vinci S/Si										3,839	1,928	1,077	
[E] da Vinci X/Xi										422,719	455,982	437,186	
[E] da Vinci Xi 2.0/Xi R										0	24,101	100,144	
[E] Total										426,558	482,011	538,406	
Actual & forecasted EndoWrist instrument units													
[F] da Vinci S/Si										3,839	1,928	1,077	
[F] da Vinci X/Xi										422,719	455,982	437,186	
[F] da Vinci Xi 2.0/Xi R										0	24,101	100,144	
[F] Total										426,558	482,011	538,406	
[F] Sub-total S/Si and X/Xi										426,558	457,910	438,263	

Intuitive's U.S. EndoWrist Instrument Units - Actual and Forecasted: 2014 - 2025

Schedule 6.0

NOTES / SOURCES:

- Note: Any minor differences are due to rounding.
- [A]** Per Schedule 13.0. Note: Actual unit sales per Schedule 13.0 are through June 2022. 2022 unit sales shown herein are annualized.
- [B]** Calculated based on the amounts herein.
- [C]** Units sales of da Vinci S/Si are projected to decline in the future at the same rate that sales declined (57.7%) between 2020 and 2021.

I understand the next generation da Vinci system could be introduced as some time in 2024 (See Somayaji Dep. 128-130). For purposes of this analysis, I assume the start of 2024. The share of sales of instruments for that next-generation system (da Vinci Xi 2.0/Xi R) are projected using the same penetration rates experienced by da Vinci X/Xi when it was introduced in 2014 (i.e., 5.0% in first year, 18.6% in second year, and so on), which is conservative given the next generation system (da Vinci Xi 2.0/Xi R) will face more legacy da Vinci systems when it is introduced.

Unit sales of da Vinci X/Xi is projected as 100% less the projected shares of da Vinci X/Xi and the next generation system.

[D] Per Intuitive forecasted annual growth rates for da Vinci surgical procedures in the United States. See Intuitive-01261766.

[E] Total forecast instrument sales calculated each year by applying growth rate **[D]** to total sales during prior year. Sales are allocated by system using shares from **[C]**.

[F] Calculated based on the amounts herein.

Estimated EndoWrist Expiration Rates: 2018 - 2021

Schedule 7.0

	2018	2019	2020	2021	Total	^[1] Sub-total 2018 - 2019
[A] Projected X/Xi annual expired EndoWrist units (for "Top 5" instruments)	73,129	100,376	129,298	157,537	460,340	173,505
Actual EndoWrist sales units for "Top 5" X/Xi instruments						
[B] 470006 / 471006 (Large Needle Driver)	22,103	29,534	31,548	30,447	113,632	51,637
[B] 470179 (Hot Shears (Monopolar Curved Scissors))	40,602	56,056	66,281	92,091	255,030	96,658
[B] 470205 / 471205 (Fenestrated Bipolar Forceps)	27,400	37,186	41,596	43,976	150,158	64,586
[B] 470093 / 471093 (ProGrasp Forceps)	20,431	29,629	33,746	30,716	114,522	50,060
[B] 470172 / 471172 (Maryland Bipolar Forceps)	10,904	14,261	15,467	16,649	57,281	25,165
[B] Actual EndoWrist sales units for "Top 5" X/Xi instruments	121,440	166,666	188,638	213,879	690,623	288,106
[C] Expiration rate of total sales units	60%	60%	69%	74%	67%	60%

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[1] Calculated based on the amounts herein

[A] Per Morales 30(b)(6) Dep. Ex. 141 (at pdf page 1). As shown on Exhibit 141 (at pdf page 1), for 2018, these "Top 5" X/Xi SKUs represented 73,129 instruments of the 104,469 expired "core" X/Xi instruments, or approximately 70%.

[B] Per Schedule 9.1. Instrument numbers and descriptions identified per Morales 30(b)(6) Dep. Ex. 141 (at pdf page 3).

[C] Calculated based on the amounts herein.

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Potential EndoWrist Instrument Units, Net Sales Dollars and Average Selling Price by System (Using Intuitive Sales Volumes and September 2019 Vizient Amended Agreement Prices): 2018 - June 2022

Schedule 8.0

	2018	2019	2020	2021	2022 thru June	Total	%
Units							
[A] da Vinci S/Si							
[B] da Vinci X/Xi							
[C] Total							
Net sales dollars							
[A] da Vinci S/Si							
[B] da Vinci X/Xi							
[C] Total							
ASP per unit							
[D] da Vinci S/Si	\$1,431	\$1,432	\$1,437	\$1,451	\$1,434	\$1,434	
[D] da Vinci X/Xi	\$1,418	\$1,411	\$1,414	\$1,425	\$1,432	\$1,420	
[D] Total	\$1,424	\$1,417	\$1,418	\$1,427	\$1,432	\$1,423	

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 8.1.

[B] Per Schedule 8.2.

[C] = [A] + [B]

[D] Calculated based on the amounts herein.

[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]

[A] Total units		
-----------------	--	--

Potential EndoWrist Instrument Units, Net Sales Dollars and ASP by Product (Instrument Number) - da Vinci S/Si (Using Intuitive Sales Volumes and September 2019 Vizient Amended Agreement Prices): 2018 - June 2022

Schedule 8.1

	2018	2019	2020	2021	2022 thru June	Total	%
ASP							
[B] 420179	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700	
[B] 420006	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420093	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420205	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420309	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420194	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420172	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420049	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420227	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420183	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420296	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420230	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420184	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420327	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420207	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420190	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420189	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420110	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420048	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420318	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420003	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420001	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420007	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420278	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420344	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420033	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	

Potential EndoWrist Instrument Units, Net Sales Dollars and ASP by Product (Instrument Number) - da Vinci S/Si (Using Intuitive Sales Volumes and September 2019 Vizient Amended Agreement Prices): 2018 - June 2022

Schedule 8.1

	2018	2019	2020	2021	2022 thru June	Total	%
[B] 420036	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420178	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 420171	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420246	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420249	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420181	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420157	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420204	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420121	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 420215	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420203	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 420192	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	

Potential EndoWrist Instrument Units, Net Sales Dollars and ASP by Product (Instrument Number) - da Vinci S/Si (Using Intuitive Sales Volumes and September 2019 Vizient Amended Agreement Prices): 2018 - June 2022

Schedule 8.1

2018	2019	2020	2021	2022 thru June	Total	%
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Net sales dollars

[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]
[C]

[illegible]

[C]

Total net sales dollars

Potential EndoWrist Instrument Units, Net Sales Dollars and ASP by Product (Instrument Number) - da Vinci S/Si (Using Intuitive Sales Volumes and September 2019 Vizient Amended Agreement Prices): 2018 - June 2022

Schedule 8.1

2018	2019	2020	2021	2022 thru June	Total	%
------	------	------	------	-------------------	-------	---

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Schedule 13.1.

[B] Schedule 12.0.

[C] = [A] * [B]

[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]
[A]

[A] Total units

Potential EndoWrist Instrument Units, Net Sales Dollars and ASP by Product (Instrument Number) - da Vinci X/Xi (Using Intuitive Sales Volumes and September 2019 Vizient Amended Agreement Prices): 2018 - June 2022

Schedule 8.2

	2018	2019	2020	2021	2022 thru June	Total	%
ASP							
[B] 470179	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700	
[B] 470205	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 471205	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 470006	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470093	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470309	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 471309	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470183	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 471093	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 471006	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470194	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470049	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 470172	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 471049	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 471172	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 470327	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 470230	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 470318	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470296	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 471296	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470184	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 470207	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470001	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 470344	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 470007	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 470190	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	

Potential EndoWrist Instrument Units, Net Sales Dollars and ASP by Product (Instrument Number) - da Vinci X/Xi (Using Intuitive Sales Volumes and September 2019 Vizient Amended Agreement Prices): 2018 - June 2022

Schedule 8.2

	2018	2019	2020	2021	2022 thru June	Total	%
[B] 471190	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 471344	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 470048	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470036	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
[B] 471048	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470033	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470249	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 470171	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 470246	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 471171	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	
[B] 470215	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	
[B] 470181	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	

	2018	2019	2020	2021	2022 thru June	Total	%
[B]							
[B]							
[B]							
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[B]							
[B]							
[B]							
[B] Total net sales dollars							

Potential EndoWrist Instrument Units, Net Sales Dollars and ASP by Product (Instrument Number) - da Vinci X/Xi (Using Intuitive Sales Volumes and September 2019 Vizient Amended Agreement Prices): 2018 - June 2022

Schedule 8.2

2018	2019	2020	2021	2022 thru June	Total	%
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NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Schedule 13.2.

[B] Schedule 12.1.

[C] = [A] * [B]

SIS's Estimated EndoWrist Instrument Repair Cost: 2020 - June 2022 Schedule 9.0

	2020	2021	2022 thru June	Total
Actual Intuitive instrument sales units for "Top 5" X/Xi instruments				
[A] 470006 / 471006 (Large Needle Driver)				
[A] 470179 (Hot Shears (Monopolar Curved Scissors))				
[A] 470205 / 471205 (Fenestrated Bipolar Forceps)				
[A] 470093 / 471093 (ProGrasp Forceps)				
[A] 470172 / 471172 (Maryland Bipolar Forceps)				
[B] Total	188,638	213,879	113,918	516,435
Intuitive COGS for refurbishment per unit (SIS's estimated repair cost per unit)				
[C] 470006 / 471006 (Large Needle Driver)				
[C] 470179 (Hot Shears (Monopolar Curved Scissors))				
[C] 470205 / 471205 (Fenestrated Bipolar Forceps)				
[C] 470093 / 471093 (ProGrasp Forceps)				
[C] 470172 / 471172 (Maryland Bipolar Forceps)				
Total Intuitive COGS for refurbishment per unit (SIS's estimated repair cost)				
[D] 470006 / 471006 (Large Needle Driver)				
[D] 470179 (Hot Shears (Monopolar Curved Scissors))				
[D] 470205 / 471205 (Fenestrated Bipolar Forceps)				
[D] 470093 / 471093 (ProGrasp Forceps)				
[D] 470172 / 471172 (Maryland Bipolar Forceps)				
[E] Total	\$27,926,837	\$33,072,546	\$17,812,049	\$78,811,432
[F] SIS's estimated weighted average repair cost per instrument (rounded)	\$148.00	\$155.00	\$156.00	\$153.00

SIS's Estimated EndoWrist Instrument Repair Cost: 2020 - June 2022 Schedule 9.0

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 9.1.

[B] Sum of [A]

[C] Intuitive anticipated refurbishment costs are per Morales 30(b)(6) Dep. at Ex. 143 (Intuitive 00626597-626616 at 626612). For purposes of my analysis, I assume SIS's repair costs per unit would have approximated Intuitive anticipated refurbishment cost per unit. However, based on discussions with Greg Posdal, I understand SIS's material cost would generally fall below \$10 per unit, less than Intuitive's anticipated \$48 to \$141 per unit. Instrument numbers identified per comparison of Morales 30(b)(6) Dep. Ex. 141 (at pdf page 3) and Morales 30(b)(6) Dep. at Ex. 143 (Intuitive 00626597-626616 at 626612). For purposes of my analysis, I assume the Intuitive cost for the "replacement" instrument number is the same as the amount shown for the "original" instrument number.

[D] = [A] * [C]

[E] Sum of [D]

[F] = [E] / [B]

Intuitive's "Top 5" X/Xi EndoWrist Instrument Units:
2018 - June 2022
Schedule 9.1

	2018	2019	2020	2021	2022	Total
					thru June	
[A]	<div></div>					
[A]						
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[A]						
[B]						
[A]						
[A]						
[B]						

NOTES / SOURCES:

- Note: Any minor differences are due to rounding.
- [A] Per Schedule 13.2. Instrument numbers identified based on Instrument numbers identified per comparison of Morales 30(b)(6) Dep. Ex. 141 (at pdf page 3). For purposes of this analysis, I also include the "replacement" instrument number.
- [B] Calculated based on the amounts herein.

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SIS's Estimated Interceptor Chip Cost (Based on Rebotix's Sales to Restore)

Schedule 10.0

	Date	Memo	Item	Quantity	Sale Price	Amount
[A]	5/15/2019	Interceptor assembly programmed with 10 Uses	Interceptor-010 (Interceptor assembly programmed with 10 Uses)	30	\$800	\$24,000
[A]	5/15/2019	New Customer Repair Credits	Discount		(\$10,400)	(\$10,400)
[A]	9/4/2019	Interceptor assembly programmed with 10 Uses	Interceptor-010 (Interceptor assembly programmed with 10 Uses)	25	\$800	\$20,000
[A]	9/4/2019	Less Credit for providing 7 free units to new customers	Discount		(\$5,600)	(\$5,600)
[A]	10/15/2019	Interceptor assembly programmed with 10 Uses	Interceptor-010 (Interceptor assembly programmed with 10 Uses)	5	\$800	\$4,000
[B]	Total			60		\$32,000
[C] Average cost per Interceptor chip (rounded)						\$533.00

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per REBOTIX175326. Calculation above is based on Rebotix's sales to Restore.

[B] Sum of [A]

[C] = Amount per [B] / Quantity per [B]

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Rebotix Sales to SIS: June 27, 2019 - November 21, 2019

Schedule 10.1

	Date	Num	Memo	Item	Quantity	Sale Price	Amount
[A]	6/27/2019	26674	Mega SutureCut Needle Driver EndoWrist Repair Service	420309-SVC (Mega SutureCut Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	6/27/2019	26674	New Customer Discount	Discount		(\$900)	(\$900)
[A]	7/17/2019	26680	Mega SutureCut Needle Driver EndoWrist Repair Service	420309-SVC (Mega SutureCut Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	8/8/2019	26696	Monopolar Curved Scissors EndoWrist Repair Service	420179-SVC (Monopolar Curved Scissors EndoWrist Repair Service)	1	\$1,300	\$1,300
[A]	8/8/2019	26696	Fenestrated Bipolar Forceps EndoWrist Repair Service	420205-SVC (Fenestrated Bipolar Forceps EndoWrist Repair Service)	1	\$1,200	\$1,200
[A]	8/8/2019	26696	ProGrasp Forceps EndoWrist Repair Service	420093-SVC (ProGrasp Forceps EndoWrist Repair Service)	1	\$900	\$900
[A]	8/8/2019	26696	Mega Needle Driver EndoWrist Repair Service	420194-SVC (Mega Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	8/8/2019	26696	Trial Wrists	Discount		(\$4,300)	(\$4,300)
[A]	9/9/2019	26702	Small Grasping Retractor EndoWrist Repair Service	420318-SVC (Small Grasping Retractor EndoWrist Repair Service)	1	\$900	\$900
[A]	9/9/2019	26702	Small Grasping Retractor EndoWrist Repair Service	420318-SVC (Small Grasping Retractor EndoWrist Repair Service)	1	\$900	\$900
[A]	9/9/2019	26702	Large Needle Driver EndoWrist Repair Service	420006-SVC (Large Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	9/9/2019	26702	Cadiere Forceps EndoWrist Repair Service	420049-SVC (Cadiere Forceps EndoWrist Repair Service)	1	\$750	\$750
[A]	9/9/2019	26702	ProGrasp Forceps EndoWrist Repair Service	420093-SVC (ProGrasp Forceps EndoWrist Repair Service)	1	\$900	\$900
[A]	9/9/2019	26702	Maryland Bipolar Forceps EndoWrist Repair Service	420172-SVC (Maryland Bipolar Forceps EndoWrist Repair Service)	0	\$1,200	\$0
[A]	9/9/2019	26702	Maryland Bipolar Forceps EndoWrist Repair Service	420172-SVC (Maryland Bipolar Forceps EndoWrist Repair Service)	0	\$1,200	\$0
[A]	9/9/2019	26702	Maryland Bipolar Forceps EndoWrist Repair Service	420172-SVC (Maryland Bipolar Forceps EndoWrist Repair Service)	0	\$1,200	\$0
[A]	10/8/2019	26738	Cadiere Forceps EndoWrist Repair Service	420049-SVC (Cadiere Forceps EndoWrist Repair Service)	0	\$750	\$0
[A]	10/8/2019	26738	Cadiere Forceps EndoWrist Repair Service	420049-SVC (Cadiere Forceps EndoWrist Repair Service)	1	\$750	\$750
[A]	10/8/2019	26738	ProGrasp Forceps EndoWrist Repair Service	420093-SVC (ProGrasp Forceps EndoWrist Repair Service)	1	\$900	\$900
[A]	10/18/2019	26746	Maryland Bipolar Forceps EndoWrist Repair Service	420172-SVC (Maryland Bipolar Forceps EndoWrist Repair Service)	1	\$1,200	\$1,200
[A]	10/18/2019	26746	Large SutureCut Needle Driver EndoWrist Repair Service	420296-SVC (Large SutureCut Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	10/18/2019	26746	Mega Needle Driver EndoWrist Repair Service	420194-SVC (Mega Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	10/18/2019	26746	Mega Needle Driver EndoWrist Repair Service	420194-SVC (Mega Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	10/18/2019	26746	DeBakey Forceps EndoWrist Repair Service	420036-SVC (DeBakey Forceps EndoWrist Repair Service)	1	\$750	\$750
[A]	10/25/2019	26748	Large Needle Driver EndoWrist Repair Service	420006-SVC (Large Needle Driver EndoWrist Repair Service)	0	\$900	\$0
[A]	10/25/2019	26748	Used EndoWrist Instrument	EndoWrist (Used EndoWrist Instrument)	1	\$100	\$100
[A]	10/25/2019	26748	Large Needle Driver EndoWrist Repair Service	420006-SVC (Large Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	10/25/2019	26748	Estimate 26748:	Discount		(\$100)	(\$100)
[A]	10/25/2019	26749	Fenestrated Bipolar Forceps EndoWrist Repair Service	420205-SVC (Fenestrated Bipolar Forceps EndoWrist Repair Service)	0	\$1,200	\$0
[A]	10/25/2019	26749	Used EndoWrist Instrument	EndoWrist (Used EndoWrist Instrument)	1	\$100	\$100
[A]	10/25/2019	26749	Fenestrated Bipolar Forceps EndoWrist Repair Service	420205-SVC (Fenestrated Bipolar Forceps EndoWrist Repair Service)	1	\$1,200	\$1,200
[A]	10/25/2019	26749	Estimate 26749:	Discount		(\$100)	(\$100)
[A]	10/25/2019	26750	PK Dissecting Forceps EndoWrist Repair Service	420227-SVC (PK Dissecting Forceps EndoWrist Repair Service)	1	\$1,200	\$1,200
[A]	10/25/2019	26751	ProGrasp Forceps EndoWrist Repair Service	420093-SVC (ProGrasp Forceps EndoWrist Repair Service)	1	\$900	\$900
[A]	10/25/2019	26752	ProGrasp Forceps EndoWrist Repair Service	420093-SVC (ProGrasp Forceps EndoWrist Repair Service)	1	\$900	\$900
[A]	10/31/2019	26754	Large SutureCut Needle Driver EndoWrist Repair Service	420296-SVC (Large SutureCut Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	10/31/2019	26754	Cadiere Forceps EndoWrist Repair Service	420049-SVC (Cadiere Forceps EndoWrist Repair Service)	1	\$750	\$750
[A]	10/31/2019	26755	Large Needle Driver EndoWrist Repair Service	420006-SVC (Large Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	10/31/2019	26756	Large Needle Driver EndoWrist Repair Service	420006-SVC (Large Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	11/12/2019	26760	Large Clip Applier EndoWrist Repair Service	420230-SVC (Large Clip Applier EndoWrist Repair Service)	1	\$750	\$750
[A]	11/12/2019	26760	Maryland Bipolar Forceps EndoWrist Repair Service	420172-SVC (Maryland Bipolar Forceps EndoWrist Repair Service)	1	\$1,200	\$1,200
[A]	11/12/2019	26760	Mega SutureCut Needle Driver EndoWrist Repair Service	420309-SVC (Mega SutureCut Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	11/12/2019	26760	Monopolar Curved Scissors EndoWrist Repair Service	420179-SVC (Monopolar Curved Scissors EndoWrist Repair Service)	1	\$1,300	\$1,300
[A]	11/12/2019	26760	Cadiere Forceps EndoWrist Repair Service	420049-SVC (Cadiere Forceps EndoWrist Repair Service)	0	\$750	\$0
[A]	11/12/2019	26760	Monopolar Curved Scissors EndoWrist Repair Service	420179-SVC (Monopolar Curved Scissors EndoWrist Repair Service)	0	\$1,300	\$0
[A]	11/12/2019	26760	Mega Needle Driver EndoWrist Repair Service	420194-SVC (Mega Needle Driver EndoWrist Repair Service)	0	\$900	\$0
[A]	11/12/2019	26760	Large Clip Applier EndoWrist Repair Service	420230-SVC (Large Clip Applier EndoWrist Repair Service)	0	\$750	\$0
[A]	11/12/2019	26760	Used EndoWrist Instrument	EndoWrist (Used EndoWrist Instrument)	4	\$100	\$400
[A]	11/12/2019	26760	Cadiere Forceps EndoWrist Repair Service	420049-SVC (Cadiere Forceps EndoWrist Repair Service)	1	\$750	\$750
[A]	11/12/2019	26760	Monopolar Curved Scissors EndoWrist Repair Service	420179-SVC (Monopolar Curved Scissors EndoWrist Repair Service)	1	\$1,300	\$1,300
[A]	11/12/2019	26760	Mega Needle Driver EndoWrist Repair Service	420194-SVC (Mega Needle Driver EndoWrist Repair Service)	1	\$900	\$900
[A]	11/12/2019	26760	Large Clip Applier EndoWrist Repair Service	420230-SVC (Large Clip Applier EndoWrist Repair Service)	1	\$750	\$750
[A]	11/12/2019	26760	New Customer Discount	Discount		(\$400)	(\$400)
[A]	11/20/2019	26762	Large Needle Driver EndoWrist Repair Service	420006-SVC (Large Needle Driver EndoWrist Repair Service)	1	\$900	\$900

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Rebotix Sales to SIS: June 27, 2019 - November 21, 2019
Schedule 10.1

	Date	Num	Memo	Item	Quantity	Sale Price	Amount
[A]	11/21/2019	26763	Large Clip Applier EndoWrist Repair Service	420230-SVC (Large Clip Applier EndoWrist Repair Service)	1	\$750	\$750
[A]	11/21/2019	26763	Monopolar Curved Scissors EndoWrist Repair Service	420179-SVC (Monopolar Curved Scissors EndoWrist Repair Service)	1	\$1,300	\$1,300
[A]	11/21/2019	26763	Fenestrated Bipolar Forceps EndoWrist Repair Service	420205-SVC (Fenestrated Bipolar Forceps EndoWrist Repair Service)	1	\$1,200	\$1,200
[A]	11/21/2019	26763	Monopolar Curved Scissors EndoWrist Repair Service	420179-SVC (Monopolar Curved Scissors EndoWrist Repair Service)	1	\$1,300	\$1,300
[A]	11/21/2019	26763	Maryland Bipolar Forceps EndoWrist Repair Service	420172-SVC (Maryland Bipolar Forceps EndoWrist Repair Service)	1	\$1,200	\$1,200
[A]	11/21/2019	26763	Tenaculum Forceps EndoWrist Repair Service	420207-SVC (Tenaculum Forceps EndoWrist Repair Service)	0	\$900	\$0
[A]	11/21/2019	26763	Used EndoWrist Instrument	EndoWrist (Used EndoWrist Instrument)	1	\$100	\$100
[A]	11/21/2019	26763	New Customer Discount	Discount		(\$100)	(\$100)
[A]	11/21/2019	26763	Tenaculum Forceps EndoWrist Repair Service	420207-SVC (Tenaculum Forceps EndoWrist Repair Service)	1	\$900	\$900
[B]	Total				49		\$35,500

NOTES / SOURCES:

- Note: Any minor differences are due to rounding.
- [A] Summarized per REBOTIX175326.
- [B] Sum of [A].

Potential EndoWrist Instrument Units, Costs and Costs per Unit by System (Using Intuitive Sales Volumes and Rebotix Pricing): 2018 - June 2022

Schedule 11.0

	2018	2019	2020	2021	2022 thru June	Total	%
Units							
[A] da Vinci S/Si							
[B] da Vinci X/Xi							
[C] Total							
Costs							
[A] da Vinci S/Si							
[B] da Vinci X/Xi							
[C] Total							
Cost per unit							
[D] da Vinci S/Si	\$1,037	\$1,038	\$1,043	\$1,055	\$1,039	\$1,040	
[D] da Vinci X/Xi	\$1,026	\$1,019	\$1,023	\$1,034	\$1,041	\$1,028	
[D] Total	\$1,031	\$1,025	\$1,026	\$1,035	\$1,041	\$1,030	

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 11.1.

[B] Per Schedule 11.2.

[C] = [A] + [B]

[D] Calculated based on the amounts herein.

[illegible]

1. **Introduction**

2. **Background**

3. **Methodology**

4. **Results**

5. **Discussion**

6. **Conclusion**

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278. **Keywords**

2

Potential EndoWrist Instrument Units, Costs and Costs per Unit by Product (Instrument Number) - da Vinci S/Si (Using Intuitive Sales Volumes and Rebotix Pricing): 2018 - June 2022

Schedule 11.1

	2018	2019	2020	2021	2022 thru June	Total	%
[B] 420003	\$900	\$900	\$900	\$900	\$900	\$900	
[B] 420001	\$750	\$750	\$750	\$750	\$750	\$750	
[B] 420007	\$750	\$750	\$750	\$750	\$750	\$750	
[B] 420278	\$900	\$900	\$900	\$900	\$900	\$900	
[B] 420344	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	
[B] 420033	\$900	\$900	\$900	\$900	\$900	\$900	
[B] 420036	\$750	\$750	\$750	\$750	\$750	\$750	
[B] 420178	\$750	\$750	\$750	\$750	\$750	\$750	
[B] 420171	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	
[B] 420246	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	
[B] 420249	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	
[B] 420181	\$900	\$900	\$900	\$900	\$900	\$900	
[B] 420157	\$900	\$900	\$900	\$900	\$900	\$900	
[B] 420204	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	
[B] 420121	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	
[B] 420215	\$900	\$900	\$900	\$900	\$900	\$900	
[B] 420203	\$900	\$900	\$900	\$900	\$900	\$900	
[B] 420192	\$750	\$750	\$750	\$750	\$750	\$750	

Costs

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Potential EndoWrist Instrument Units, Costs and Costs per Unit by Product (Instrument Number) - da Vinci S/Si (Using Intuitive Sales Volumes and Rebotix Pricing): 2018 - June 2022

Schedule 11.1

	2018	2019	2020	2021	2022	Total	%
[C]							
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[C] Total costs							

Potential EndoWrist Instrument Units, Costs and Costs per Unit by Product (Instrument Number) - da Vinci S/Si (Using Intuitive Sales Volumes and Rebotix Pricing): 2018 - June 2022

Schedule 11.1

2018	2019	2020	2021	2022	Total	%
				thru June		

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Schedule 13.1.

[B] Schedule 12.0.

[C] = [A] * [B]

Schedule 11.2

2018	2019	2020	2021	2022	Total	%
				thru June		

Units

[illegible]

Potential EndoWrist Instrument Units, Costs and Costs per Unit by Product (Instrument Number) - da Vinci X/Xi (Using Intuitive Sales Volumes and Rebotix Pricing): 2018 - June 2022

Schedule 11.2

2018	2019	2020	2021	2022	Total	%
				thru June		

[A]	
[A]	
[A]	
[A]	
[A]	
[A]	
[A]	
[A]	

[A] Total units


Cost per unit

[B] 470179	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300
[B] 470205	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200
[B] 471205	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200
[B] 470006	\$900	\$900	\$900	\$900	\$900	\$900
[B] 470093	\$900	\$900	\$900	\$900	\$900	\$900
[B] 470309	\$900	\$900	\$900	\$900	\$900	\$900
[B] 471309	\$900	\$900	\$900	\$900	\$900	\$900
[B] 470183	\$750	\$750	\$750	\$750	\$750	\$750
[B] 471093	\$900	\$900	\$900	\$900	\$900	\$900
[B] 471006	\$900	\$900	\$900	\$900	\$900	\$900
[B] 470194	\$900	\$900	\$900	\$900	\$900	\$900
[B] 470049	\$750	\$750	\$750	\$750	\$750	\$750
[B] 470172	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200
[B] 471049	\$750	\$750	\$750	\$750	\$750	\$750
[B] 471172	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200
[B] 470327	\$750	\$750	\$750	\$750	\$750	\$750
[B] 470230	\$750	\$750	\$750	\$750	\$750	\$750
[B] 470318	\$900	\$900	\$900	\$900	\$900	\$900
[B] 470296	\$900	\$900	\$900	\$900	\$900	\$900
[B] 471296	\$900	\$900	\$900	\$900	\$900	\$900
[B] 470184	\$750	\$750	\$750	\$750	\$750	\$750

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Potential EndoWrist Instrument Units, Costs and Costs per Unit
by Product (Instrument Number) - da Vinci X/Xi (Using Intuitive
Sales Volumes and Rebotix Pricing): 2018 - June 2022
Schedule 11.2

	2018	2019	2020	2021	2022 thru June	Total	%
[C]							
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[C]							
[C]	Total costs						

Potential EndoWrist Instrument Units, Costs and Costs per Unit
by Product (Instrument Number) - da Vinci X/Xi (Using Intuitive
Sales Volumes and Rebotix Pricing): 2018 - June 2022
Schedule 11.2

2018	2019	2020	2021	2022	Total	%
				thru June		

NOTES / SOURCES:

- Note: Any minor differences are due to rounding.
- [A] Schedule 13.2.
- [B] Schedule 12.1.
- [C] = [A] * [B]

SIS's EndoWrist Instrument Sales Prices and Costs (from Rebotix) - da Vinci S/Si Schedule 12.0

[1] Instrument Number	[1] Description	[1] SIS sales price	[2] SIS cost from Rebotix
420179	Hot Shears (Monopolar Curved Scissors)	\$1,700	\$1,300
420110	PreCise Bipolar Forceps	\$1,600	\$1,200
420121	Fine Tissue Forceps	\$1,600	\$1,200
420171	Micro Bipolar Forceps	\$1,600	\$1,200
420172	Maryland Bipolar Forceps	\$1,600	\$1,200
420204	Atrial Retractor	\$1,600	\$1,200
420205	Fenestrated Bipolar Forceps	\$1,600	\$1,200
420227	PK® Dissecting Forceps	\$1,600	\$1,200
420246	Atrial Retractor Short Right	\$1,600	\$1,200
420249	Dual Blade Retractor	\$1,600	\$1,200
420344	Curved Bipolar Dissector	\$1,600	\$1,200
420003	Small Clip Applier	\$1,300	\$900
420006	Large Needle Driver	\$1,300	\$900
420033	Black Diamond Micro Forceps	\$1,300	\$900
420048	Long Tip Forceps	\$1,300	\$900
420093	ProGrasp Forceps	\$1,300	\$900
420157	Snap-fit™ Scalpel Instrument	\$1,300	\$900
420181	Resano Forceps	\$1,300	\$900
420190	Cobra Grasper	\$1,300	\$900
420194	Mega Needle Driver	\$1,300	\$900
420203	Pericardial Dissector	\$1,300	\$900

SIS's EndoWrist Instrument Sales Prices and Costs (from Rebotix) - da Vinci S/Si Schedule 12.0

[1] Instrument Number	[1] Description	[1] SIS sales price	[2] SIS cost from Rebotix
420207	Tenaculum Forceps	\$1,300	\$900
420215	Cardiac Probe Grasper	\$1,300	\$900
420278	Graptor (Grasping Retractor)	\$1,300	\$900
420296	Large SutureCut™ Needle Driver	\$1,300	\$900
420309	Mega™ SutureCut™ Needle Driver	\$1,300	\$900
420318	Small Graptor (Grasping Retractor)	\$1,300	\$900
420001	Potts Scissors	\$1,100	\$750
420007	Round Tip Scissors	\$1,100	\$750
420036	DeBakey Forceps	\$1,100	\$750
420049	Cadiere Forceps	\$1,100	\$750
420178	Curved Scissors	\$1,100	\$750
420183	Permanent Cautery Hook	\$1,100	\$750
420184	Permanent Cautery Spatula	\$1,100	\$750
420189	Double Fenestrated Grasper	\$1,100	\$750
420192	Valve Hook	\$1,100	\$750
420230	Large Clip Applier	\$1,100	\$750
420327	Medium-Large Clip Applier	\$1,100	\$750

SIS's EndoWrist Instrument Sales Prices and Costs (from Rebotix) - da Vinci S/Si Schedule 12.0

[1]	[1]	[1]	[2]
Instrument Number	Description	SIS sales price	SIS cost from Rebotix

NOTES / SOURCES:

- [1] Per SIS000047-49. See *also*, Keith Johnson Dep. Ex. 137 (at SIS097181), SIS000035-45 at 44 and SIS000024. Prices shown above are also consistent with prices shown on Schedule 14.0, representing actual sales from SIS to customers.
- [2] Per REBOTIX162208-162212 at 212. Prices above reflect the distributor price offered by Rebotix to distributors. See *also*, Schedule 10.1 showing sales from Rebotix to SIS.

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SIS's EndoWrist Instrument Sales Prices and Costs (from Rebotix) - da Vinci X/Xi

Schedule 12.1

Instrument Number	Description	Source of Identification	[1] SIS sales price	[2] SIS cost from Rebotix
470179	Hot Shears (Monopolar Curved Scissors)	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420179	\$1,700	\$1,300
470110	PreCise Bipolar Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420110	\$1,600	\$1,200
470121	Fine Tissue Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420121	\$1,600	\$1,200
470171	Micro Bipolar Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420171	\$1,600	\$1,200
471171	Micro Bipolar Forceps	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,600	\$1,200
470172	Maryland Bipolar Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420172	\$1,600	\$1,200
471172	Maryland Bipolar Forceps	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,600	\$1,200
470204	Atrial Retractor	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420204	\$1,600	\$1,200
470205	Fenestrated Bipolar Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420205	\$1,600	\$1,200
471205	Fenestrated Bipolar Forceps	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,600	\$1,200
470227	PK® Dissecting Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420227	\$1,600	\$1,200
470246	Atrial Retractor Short Right	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420246	\$1,600	\$1,200
470249	Dual Blade Retractor	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420249	\$1,600	\$1,200
470344	Curved Bipolar Dissector	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420344	\$1,600	\$1,200
471344	Curved Bipolar Dissector	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,600	\$1,200
470003	Small Clip Applier	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420003	\$1,300	\$900
470006	Large Needle Driver	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420006	\$1,300	\$900
471006	Large Needle Driver	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,300	\$900
470033	Black Diamond Micro Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420033	\$1,300	\$900
470048	Long Tip Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420048	\$1,300	\$900
471048	Long Tip Forceps	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,300	\$900
470093	ProGrasp Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420093	\$1,300	\$900
471093	ProGrasp Forceps	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,300	\$900
470157	Snap-fit™ Scalpel Instrument	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420157	\$1,300	\$900
470181	Resano Forceos	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420181	\$1,300	\$900
470190	Cobra Grasper	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420190	\$1,300	\$900
471190	Cobra Grasper	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,300	\$900
470194	Mega Needle Driver	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420194	\$1,300	\$900
470203	Pericardial Dissector	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420203	\$1,300	\$900
470207	Tenaculum Forceos	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420207	\$1,300	\$900
470215	Cardiac Probe Grasper	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420215	\$1,300	\$900
470278	Graptor (Grasping Retractor)	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420278	\$1,300	\$900
470296	Large SutureCut™ Needle Driver	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420296	\$1,300	\$900
471296	Large SutureCut™ Needle Driver	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,300	\$900

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SIS's EndoWrist Instrument Sales Prices and Costs (from Rebotix) - da Vinci X/Xi

Schedule 12.1

Instrument Number	Description	Source of Identification	[1]	[2]
			SIS sales price	SIS cost from Rebotix
470309	Mega™ SutureCut™ Needle Driver	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420309	\$1,300	\$900
471309	Mega™ SutureCut™ Needle Driver	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,300	\$900
470318	Small Graptor (Grasping Retractor)	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420318	\$1,300	\$900
470001	Potts Scissors	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420001	\$1,100	\$750
470007	Round Tip Scissors	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420007	\$1,100	\$750
470036	DeBakey Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420036	\$1,100	\$750
470049	Cadiere Forceps	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 470049	\$1,100	\$750
471049	Cadiere Forceps	Da Vinci X/Xi Instrument & Accessory Catalog October 2021	\$1,100	\$750
470178	Curved Scissors	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420178	\$1,100	\$750
470183	Permanent Cautery Hook	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420183	\$1,100	\$750
470184	Permanent Cautery Spatula	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420184	\$1,100	\$750
470189	Double Fenestrated Grasper	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420189	\$1,100	\$750
470192	Valve Hook	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420192	\$1,100	\$750
470230	Large Clip Applier	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420230	\$1,100	\$750
470327	Medium-Large Clip Applier	Corresponding Da Vinci S/Si Material Number per Schedule 12.0 - 420327	\$1,100	\$750

NOTES / SOURCES:

Note: Per the Deposition of Grant Duque 25-36, 48-52 and 156-157 (November 8, 2022), I understand Intuitive's S/Si and X/Xi EndoWrist instruments are used for the same applications and essentially perform the same functions.

[1] Per SIS000047-49, pricing was based on the da Vinci S/Si platform. I assume a similar price for the X/Xi platform. This appears reasonable, as per Schedules 13.1 and 13.2, the Intuitive average selling price for similar instrument numbers appear to be the approximately the same (i.e., 420179 and 470179). This would suggest the SIS price to its customers would be approximately the same.

[2] Per REBOTIX162208-162212 at 212, pricing (cost) was based on the da Vinci S/Si platform. I assume a similar price (cost) for the X/Xi platform. This appears reasonable, as per Schedules 13.1 and 13.2, the Intuitive average selling price for similar instrument numbers appear to be the approximately the same (i.e., 420179 and 470179). This would suggest the price (cost) to SIS would be approximately the same.

SIS's EndoWrist Instrument Sale Price vs Intuitive Sales Price - da Vinci S/Si

Schedule 12.2

[1]	[1]	[1]	[2]	[3]	[4]
Instrument Number	Description	SIS sales price	Intuitive sales price	Difference	% Discount
420179	Hot Shears (Monopolar Curved Scissors)	\$1,700	\$3,200	(\$1,500)	-47%
420110	PreCise Bipolar Forceps	\$1,600	\$2,708	(\$1,108)	-41%
420121	Fine Tissue Forceps	\$1,600	\$2,864	(\$1,264)	-44%
420171	Micro Bipolar Forceps	\$1,600	\$2,755	(\$1,155)	-42%
420172	Maryland Bipolar Forceps	\$1,600	\$2,705	(\$1,105)	-41%
420204	Atrial Retractor	\$1,600	\$2,964	(\$1,364)	-46%
420205	Fenestrated Bipolar Forceps	\$1,600	\$2,702	(\$1,102)	-41%
420227	PK® Dissecting Forceps	\$1,600	\$2,904	(\$1,304)	-45%
420246	Atrial Retractor Short Right	\$1,600	\$2,963	(\$1,363)	-46%
420249	Dual Blade Retractor	\$1,600	\$2,332	(\$732)	-31%
420344	Curved Bipolar Dissector	\$1,600	\$2,735	(\$1,135)	-41%
420003	Small Clip Applier	\$1,300	\$2,410	(\$1,110)	-46%
420006	Large Needle Driver	\$1,300	\$2,200	(\$900)	-41%
420033	Black Diamond Micro Forceps	\$1,300	\$2,519	(\$1,219)	-48%
420048	Long Tip Forceps	\$1,300	\$2,473	(\$1,173)	-47%
420093	ProGrasp Forceps	\$1,300	\$2,201	(\$901)	-41%
420157	Snap-fit™ Scalpel Instrument	\$1,300	\$3,011	(\$1,711)	-57%
420181	Resano Forceps	\$1,300	\$2,228	(\$928)	-42%
420190	Cobra Grasper	\$1,300	\$2,213	(\$913)	-41%
420194	Mega Needle Driver	\$1,300	\$2,201	(\$901)	-41%
420203	Pericardial Dissector	\$1,300	\$2,221	(\$921)	-41%
420207	Tenaculum Forceps	\$1,300	\$2,221	(\$921)	-41%

SIS's EndoWrist Instrument Sale Price vs Intuitive Sales Price - da Vinci S/Si

Schedule 12.2

[1]	[1]	[1]	[2]	[3]	[4]
Instrument Number	Description	SIS sales price	Intuitive sales price	Difference	% Discount
420215	Cardiac Probe Grasper	\$1,300	\$2,248	(\$948)	-42%
420278	Graptor (Grasping Retractor)	\$1,300	\$2,433	(\$1,133)	-47%
420296	Large SutureCut™ Needle Driver	\$1,300	\$2,402	(\$1,102)	-46%
420309	Mega™ SutureCut™ Needle Driver	\$1,300	\$2,405	(\$1,105)	-46%
420318	Small Graptor (Grasping Retractor)	\$1,300	\$2,115	(\$815)	-39%
420001	Potts Scissors	\$1,100	\$1,970	(\$870)	-44%
420007	Round Tip Scissors	\$1,100	\$1,980	(\$880)	-44%
420036	DeBakey Forceps	\$1,100	\$1,866	(\$766)	-41%
420049	Cadiere Forceps	\$1,100	\$2,005	(\$905)	-45%
420178	Curved Scissors	\$1,100	\$2,026	(\$926)	-46%
420183	Permanent Cautery Hook	\$1,100	\$2,008	(\$908)	-45%
420184	Permanent Cautery Spatula	\$1,100	\$2,014	(\$914)	-45%
420189	Double Fenestrated Grasper	\$1,100	\$2,014	(\$914)	-45%
420192	Valve Hook	\$1,100	\$1,799	(\$699)	-39%
420230	Large Clip Applier	\$1,100	\$1,408	(\$308)	-22%
420327	Medium-Large Clip Applier	\$1,100	\$1,410	(\$310)	-22%
Average (simple)					-42%

SIS's EndoWrist Instrument Sale Price vs Intuitive Sales Price - da Vinci S/Si

Schedule 12.2

[1]	[1]	[1]	[2]	[3]	[4]
Instrument Number	Description	SIS sales price	Intuitive sales price	Difference	% Discount

NOTES / SOURCES:

- [1] Per Schedule 12.0.
- [2] Per Schedule 13.1.
- [3] SIS sales price per [1] - [2]
- [4] = [3] / [2]

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Intuitive's EndoWrist Instrument Units, Net Sales Dollars and Average Selling Price by System: 2014 - June 2022
Schedule 13.0

		2014	2015	2016	2017	2018	2019	2020	2021	2022 thru June	Total	%	2022 Annualized
Units													
[A]	da Vinci S/Si												
[B]	da Vinci X/Xi												
[C]	Total units												
Net sales dollars													
[A]	da Vinci S/Si												
[B]	da Vinci X/Xi												
[C]	Total net sales dollars												
ASP per unit													
[D]	da Vinci S/Si	\$2,508	\$2,511	\$2,518	\$2,521	\$2,528	\$2,537	\$2,572	\$2,659	\$2,538	\$2,524		\$2,538
[D]	da Vinci X/Xi	\$2,417	\$2,453	\$2,477	\$2,486	\$2,499	\$2,491	\$2,542	\$2,657	\$2,666	\$2,557		\$2,666
[D]	Total ASP per unit	\$2,503	\$2,500	\$2,506	\$2,506	\$2,512	\$2,504	\$2,546	\$2,658	\$2,663	\$2,544		\$2,663

NOTES / SOURCES:

- Note: Any minor differences are due to rounding.
- [A] Per Schedule 13.1.
- [B] Per Schedule 13.2.
- [C] = [A] + [B]
- [D] Calculated based on the amounts herein.

2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	%
								thru Jun		

Units[illegible]

[B] Total units

[illegible]**Total net sales dollars**

[illegible]

ASP

[B]

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Intuitive's EndoWrist Instrument Units and Net Sales Dollars by Product
(Instrument Number) - da Vinci S/Si: 2014 - June 2022
Schedule 13.1

2014	2015	2016	2017	2018	2019	2020	2021	2022 thru Jun	Total	%
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NOTES / SOURCES:

- Note: Any minor differences are due to rounding.
- Note: U.S. sales were identified by using the "Comp Code" field and filtering for "2000" and using the "Unit" field and filtering for "EA." Each S/Si instrument above was selected based on SIS000047-49 (See also, Schedule 12.0). Per REBOTIX162208-162212 at 212, I understand all of the S/Si EndoWrists identified above are repairable by Rebotix.
- [A] Summarized per Intuitive-00595406-413, Intuitive-00595415-428, Intuitive-00595434-437, Intuitive-00695231-233, Intuitive-01101508 and Intuitive-02025757-759.
- [B] Calculated based on the amounts herein.

2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	%
								thru June		

[illegible]**Total units**

[illegible]**Total net sales dollars**

[illegible]ASP

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Intuitive's EndoWrist Instrument Units and Net Sales Dollars by Product (Instrument Number) - da Vinci X/Xi: 2014 - June 2022

Schedule 13.2

2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	%
								thru June		

NOTES / SOURCES:

- Note: Any minor differences are due to rounding.
- Note: U.S. sales were identified by using the "Comp Code" field and filtering for "2000" and using the "Unit" field and filtering for "EA." Each X/Xi instrument was selected as described on Schedule 12.1.
- [A] Summarized per Intuitive-00595406-413, Intuitive-00595415-428, Intuitive-00595434-437, Intuitive-00695231-233, Intuitive-01101508 and Intuitive-02025757-759.
- [B] Calculated based on the amounts herein.

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SIS's EndoWrist Instrument Repair Summary
Schedule 14.0

[1]	[1]	[1]	[1]	[1]	[2]	[1]	[1]	[1]	[3]	[3]	[3]	[3]	[3]
Order date	Customer	Invoice #	Quantity	Price	Sales	Item (EndoWrist Instrument Number)	Item description	Item comments	Total count	Repaired count	Not repaired count	Expired count	Not supported count
11/14/18	ALEXIAN BROTHERS MEDICAL CTR	60576-1	1	\$0.00	N/A	470001	DaVinci Potts Scissors	Severely damaged. BEYOND REPAIR. Needs replacement	1		1		
06/28/19	LEGACY GOOD SAMARITAN	61059-1	1	\$1,300.00	\$1,300.00	420309	Needle Driver, Mega Suture Cut	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	2	1			
07/18/19	LEGACY GOOD SAMARITAN	61064-1	1	\$1,300.00	\$1,300.00	420309	Needle Driver, Mega Suture Cut	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	3	2			
08/27/19	KAISER FONTANA	95513-1	1	\$1,700.00	\$0.00	420179	Monopolar Curved Scissors	Monopolar Curved Scissors EndoWrist Repair Services	4	3			
08/27/19	KAISER FONTANA	95513-1	1	\$1,600.00	\$0.00	420205	Fenestrated Bipolar Forceps	Fenestrated Bipolar Forceps EndoWrist Repair Services	5	4			
08/27/19	KAISER FONTANA	95513-1	1	\$1,300.00	\$0.00	420093	ProGrasp Forceps	ProGrasp Forceps EndoWrist Repair Services	6	5			
08/27/19	KAISER FONTANA	95513-1	1	\$1,300.00	\$0.00	420194	Mega Needle Driver	Mega Needle Driver EndoWrist Repair Services	7	6			
09/09/19	KAISER FONTANA	60733-1	1	\$1,300.00	\$1,300.00	420318	Small Graptor (Grasping Retractor)	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	8	7			
09/09/19	KAISER FONTANA	60733-1	1	\$1,300.00	\$1,300.00	420006	Needle Driver, Large	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	9	8			
09/09/19	KAISER FONTANA	60733-1	1	\$1,300.00	\$1,300.00	420093	Forceps, ProGrasp	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	10	9			
09/09/19	KAISER FONTANA	60733-1	1	\$1,300.00	\$1,300.00	420318	Small Graptor (Grasping Retractor)	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	11	10			
09/09/19	KAISER FONTANA	60733-1	1	\$1,100.00	\$1,100.00	420049	Forceps, Cadiere	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	12	11			
09/09/19	KAISER FONTANA	60733-2	1	\$0.00	N/A	420172	Bipolar Forceps, Maryland	BEYOND REPAIR. Needs replacement	13		2		
09/09/19	KAISER FONTANA	60733-2	1	\$0.00	N/A	420172	Bipolar Forceps, Maryland	BEYOND REPAIR. Needs replacement	14		3		
09/09/19	KAISER FONTANA	60733-2	1	\$0.00	N/A	420172	Bipolar Forceps, Maryland	BEYOND REPAIR. Needs replacement	15		4		
	ADVOCATE GOOD SAMARITAN	95713-1	1	\$0.00	N/A	420205	Fenestrated Bipolar Forceps	Expired. BEYOND REPAIR. SIS is unable to provide a replacement	16			1	
10/29/19	MARIN HEALTH MEDICAL CENTER	90009-1	1	\$1,300.00	\$1,300.00	420296	Needle Driver, Large Suture Cut	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	17	12			
10/29/19	MARIN HEALTH MEDICAL CENTER	90009-1	1	\$1,300.00	\$1,300.00	420194	Needle Driver, Mega	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	18	13			
10/29/19	MARIN HEALTH MEDICAL CENTER	90009-1	1	\$1,100.00	\$1,100.00	420036	Forceps, DeBakey	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	19	14			
10/29/19	MARIN HEALTH MEDICAL CENTER	90009-1	1	\$1,600.00	\$1,600.00	420172	Bipolar Forceps, Maryland	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	20	15			
10/29/19	MARIN HEALTH MEDICAL CENTER	90009-1	1	\$1,300.00	\$1,300.00	420194	Needle Driver, Mega	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	21	16			
10/30/19	ADVOCATE SOUTH SUBURBAN HOSP	61148-1	1	\$1,600.00	\$1,600.00	420205	Fenestrated Bipolar Forceps	Repair/Exchange. Received SN: N10190207	22	17			
10/30/19	ADVOCATE SOUTH SUBURBAN HOSP	61148-2	1	\$1,600.00	\$1,600.00	420227	PK® Dissecting Forceps	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	23	18			
10/30/19	ADVOCATE SOUTH SUBURBAN HOSP	61148-3	1	\$1,300.00	\$1,300.00	420093	Forceps, ProGrasp	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	24	19			
10/30/19	ADVOCATE SOUTH SUBURBAN HOSP	61148-4	1	\$1,300.00	\$1,300.00	420093	Forceps, ProGrasp	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	25	20			
10/30/19	ADVOCATE SOUTH SUBURBAN HOSP	61148-5	1	\$1,300.00	\$1,300.00	420006	Needle Driver, Large	Refurbish tool end. Clean. Mechanical inspection and testing. Repair/Exchange. Received SN: N10190327	26	21			
10/30/19	ADVOCATE SOUTH SUBURBAN HOSP	61148-6	1	\$1,100.00	\$1,100.00	420049	Forceps, Cadiere	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	27	22			
10/30/19	ADVOCATE SOUTH SUBURBAN HOSP	61148-7	1	\$1,300.00	\$1,300.00	420093	Forceps, ProGrasp	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	28	23			
10/29/19	ADVOCATE SOUTH SUBURBAN HOSP	61148-8	1	\$0.00	N/A	420049	Forceps, Cadiere	Expired and disposed of. BEYOND REPAIR. SIS is unable to provide a replacement.	29			2	
11/06/19	ADVOCATE SOUTH SUBURBAN HOSP	61156-1	1	\$1,300.00	\$1,300.00	420006	Needle Driver, Large	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	30	24			
11/06/19	ADVOCATE SOUTH SUBURBAN HOSP	61156-2	1	\$1,300.00	\$1,300.00	420006	Needle Driver, Large	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	31	25			
11/14/19	MARIN HEALTH MEDICAL CENTER	60137-1	1	\$1,300.00	\$1,300.00	420296	Needle Driver, Large Suture Cut	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	32	26			
11/14/19	MARIN HEALTH MEDICAL CENTER	60137-1	1	\$1,100.00	\$1,100.00	420049	Forceps, Cadiere	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	33	27			
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$1,700.00	N/A	420179	Scissors, Curved Monopolar	Repair/Exchange. Received SN: N12190701	34	28			
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$1,300.00	N/A	420309	Needle Driver, Mega Suture Cut	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	35	29			
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$1,700.00	N/A	420179	Scissors, Curved Monopolar	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions	36	30			

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SIS's EndoWrist Instrument Repair Summary

Schedule 14.0

[1]	[1]	[1]	[1]	[1]	[2]	[1]	[1]	[1]	[3]	[3]	[3]	[3]	[3]
Order date	Customer	Invoice #	Quantity	Price	Sales	Item (EndoWrist Instrument Number)	Item description	Item comments	Total count	Repaired count	Not repaired count	Expired count	Not supported count
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$1,100.00	N/A	420049	Forceps, Cadiere	Repair/Exchange. Received SN: N10180822	37	31			
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$1,100.00	N/A	420230	Applier, Large Clip	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions.	38	32			
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$1,600.00	N/A	420172	Bipolar Forceps, Maryland	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions.	39	33			
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$1,100.00	N/A	420230	Applier, Large Clip	Repair/Exchange. Received SN: N10170921	40	34			
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$1,300.00	N/A	420194	Needle Driver, Mega	Repair/Exchange. Received SN: M10140121	41	35			
11/15/19	MARIN HEALTH MEDICAL CENTER	90008-1	1	\$0.00	N/A	420275	Shears, Harmonic Ace Curved	Model number is not supported. NO REPAIR	42				1
	ADVOCATE GOOD SAMARITAN	96156-1	1	\$1,300.00	N/A	420006	Needle Driver, Large	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions.	43	36			
12/10/19	MARIN HEALTH MEDICAL CENTER	90010-1	1	\$1,100.00	\$1,100.00	420230	Applier, Large Clip	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions.	44	37			
12/10/19	MARIN HEALTH MEDICAL CENTER	90010-1	1	\$1,300.00	\$1,300.00	420207	Forceps, Tenaculum	Repair/Exchange. Received SN: M10100316	45	38			
12/10/19	MARIN HEALTH MEDICAL CENTER	90010-1	1	\$1,600.00	\$1,600.00	420172	Bipolar Forceps, Maryland	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions.	46	39			
12/10/19	MARIN HEALTH MEDICAL CENTER	90010-1	1	\$1,600.00	\$1,600.00	420172	Bipolar Forceps, Maryland	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions.	47	40			
12/10/19	MARIN HEALTH MEDICAL CENTER	90010-1	1	\$1,700.00	\$1,700.00	420179	Scissors, Curved Monopolar	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions.	48	41			
12/10/19	MARIN HEALTH MEDICAL CENTER	90010-1	1	\$1,600.00	\$1,600.00	420205	Fenestrated Bipolar Forceps	Refurbish tool end. Clean. Mechanical inspection and testing. Electrical safety testing. Use count reset and test all functions.	49	42			
					\$38,900.00	Total			49	42	4	2	1
[A] Repair yield of SIS collectable units									88%				

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

Note: Column headings are based on a review of invoices, for example, SIS000097-112.

- [1] Summarized per SIS000167.
- [2] Summarized per SIS000097-112. I have indicated "N/A" for records where invoices could not be located.
- [3] Count based on "Item Comments."
- [A] Calculated as Repaired Count / (Repaired Count + Not Repaired Count + Expired Count).

SIS's Financial Statements: 2019 - October 2021

Schedule 15.0

	[1]		[2]		[3]	
	2019		2020		2021 (thru Oct)	
	Amount	%	Amount	%	Amount	%
Revenue	\$6,996,108	100.0%	\$10,723,980	100.0%	\$10,092,079	100.0%
Cost of goods sold	\$4,084,286	58.4%	\$5,863,755	54.7%	\$5,813,610	57.6%
Gross profit	\$2,911,822	41.6%	\$4,860,225	45.3%	\$4,278,469	42.4%
Expenses:						
Selling	\$1,415,642	20.2%	\$1,893,403	17.7%	\$1,899,002	18.8%
General and admin	\$1,125,420	16.1%	\$1,224,361	11.4%	\$1,428,002	14.1%
Total expenses	\$2,541,062	36.3%	\$3,117,764	29.1%	\$3,327,004	33.0%
Operating income	\$370,760	5.3%	\$1,742,461	16.2%	\$951,465	9.4%
Other income and (expense)	(\$2,175)	0.0%	\$571,623	5.3%	\$1,208	0.0%
Profit before taxes	\$368,585	5.3%	\$2,314,084	21.6%	\$952,673	9.4%

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[1] Per SIS320176-188 at 176.

[2] Per SIS320922-935 at 922.

[3] Per SIS327629-636 at 629. Note: Per discussions with Greg Posdal, SIS's 2021 sales approximated \$12.4 million.

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SIS's Detailed SGA: 2019 - October 2021
Schedule 15.1

	[1]		[2]		[3]				[4]	[4]	[4]
	2019		2020		2021 (thru Oct)		Total		Fixed / Variable	Variable as a % of revenue	Notes
	Amount	%	Amount	%	Amount	%	Amount	%			
Revenue	\$6,996,108	100.00%	\$10,723,980	100.00%	\$10,092,079	100.00%	\$27,812,167	100.00%			
Cost of goods sold	\$4,084,286	58.38%	\$5,863,755	54.68%	\$5,813,610	57.61%	\$15,761,651	56.67%			
Gross profit	\$2,911,822	41.62%	\$4,860,225	45.32%	\$4,278,469	42.39%	\$12,050,516	43.33%			
Expenses:											
<u>Selling:</u>											
Wages - Sales	\$611,469	8.74%	\$732,356	6.83%	\$688,552	6.82%	\$2,032,377	7.31%	Partially variable	2.00%	Currently have approximately 10-12 Associate Sales Representatives ("ASRs") managing more than 1 million annual repair units, which approximates 80,000-100,000 repair units per ASR. According to discussion with Greg Posdal, SIS would potentially add up to as many as 10 additional ASRs to sell both EndoWrist repairs and other SIS products/services. New ASRs cost approximately \$50,000 in wages annually. Ten ASRs would approximate \$500,000 in wages per year, which represents less than 1% of the maximum annual lost EndoWrist repair revenue of approximately \$71.2 million as shown on Schedule 2.0. In addition, SIS pays a 1% commission for each EndoWrist sale. For purposes of my analysis, I use 2% as variable.
Depreciation	\$99,593	1.42%	\$138,413	1.29%	\$186,331	1.85%	\$424,337	1.53%	Fixed		Consists of depreciation for larger equipment, machining center, loaner inventory, vehicles and on-site repair vans.
Rent	\$132,070	1.89%	\$138,389	1.29%	\$125,989	1.25%	\$396,448	1.43%	Fixed		No need for additional space for EndoWrist repairs.
Insurance Group	\$110,040	1.57%	\$151,624	1.41%	\$123,787	1.23%	\$385,451	1.39%	Partially variable	1.39%	Consists of employee health insurance premiums. For purposes of my analysis, I treat this as variable.
Professional Fees	\$76,345	1.09%	\$101,522	0.95%	\$134,047	1.33%	\$311,914	1.12%	Fixed		Consists of attorney and accountant fees and one off fees for consultant and training.
Insurance	\$61,858	0.88%	\$87,102	0.81%	\$86,377	0.86%	\$235,337	0.85%	Partially variable	0.85%	Consists of life insurance, workers comp, general liability insurance premiums. For purposes of my analysis, I treat this as variable.
Outside Services	\$40,858	0.58%	\$80,989	0.76%	\$90,703	0.90%	\$212,550	0.76%	Fixed		Consists of IT support and temporary employee labor fees.
Sales - Bonus		0.00%	\$100,000	0.93%	\$87,386	0.87%	\$187,386	0.67%	Variable	0.67%	
Operating Supplies	\$28,480	0.41%	\$86,029	0.80%	\$62,804	0.62%	\$177,313	0.64%	Variable	0.64%	Consists of non-inventory production, lab supplies and small tools.
Maintenance & Repair	\$33,229	0.47%	\$69,539	0.65%	\$47,595	0.47%	\$150,363	0.54%	Fixed		Fire prevention, janitorial cleaning, small repairs, lawn service and HVAC.
Office Expense	\$50,009	0.71%	\$59,239	0.55%	\$27,090	0.27%	\$136,338	0.49%	Partially variable	0.49%	For purposes of my analysis, I treat this as variable.
Real Estate Taxes	\$40,773	0.58%	\$45,735	0.43%	\$41,176	0.41%	\$127,684	0.46%	Fixed		SIS would not require additional space.
Entertainment	\$47,255	0.68%	\$40,153	0.37%	\$32,022	0.32%	\$119,430	0.43%	Variable	0.43%	
Payroll Fees	\$10,525	0.15%	\$17,306	0.16%	\$56,617	0.56%	\$84,448	0.30%	Variable	0.05%	Calculated as (0.30% Payroll Fees / (7.31% Wages - Sales + 0.67% Sales - Bonus + 4.10% Salaries/Employees + 2.65% Salaries/Officers + 0.10% Salaries Office AZ) *(2.00% Wages - Sales + 0.20% Salaries/Employees) as I understand this relates to selling, general and administrative wages and bonuses paid.
Interest Expense	\$34,572	0.49%	\$19,034	0.18%	\$9,679	0.10%	\$63,285	0.23%	Fixed		Consists of interest on the line of credit which would potentially decrease.
Sales & Marketing	\$1,827	0.03%	\$325	0.00%	\$45,346	0.45%	\$47,498	0.17%	Variable	0.17%	
Dues & Subscriptions	\$16,747	0.24%	\$7,796	0.07%	\$7,387	0.07%	\$31,930	0.11%	Fixed		
Printing & Advertise	\$5,572	0.08%	\$6,252	0.06%	\$10,994	0.11%	\$22,818	0.08%	Variable	0.08%	
Meals		0.00%		0.00%	\$22,469	0.22%	\$22,469	0.08%	Variable	0.08%	
Misc Expense		0.00%	\$5,000	0.05%	\$6,903	0.07%	\$11,903	0.04%	Variable	0.04%	
Licenses & Permits	\$6,550	0.09%	\$2,562	0.02%	\$511	0.01%	\$9,623	0.03%	Fixed		
Promotional & Gifts	\$1,948	0.03%	\$1,098	0.01%	\$3,286	0.03%	\$6,332	0.02%	Variable	0.02%	
Postage	\$2,278	0.03%	\$1,613	0.02%	\$1,878	0.02%	\$5,769	0.02%	Variable	0.02%	
Amortization	\$3,644	0.05%	\$1,302	0.01%		0.00%	\$4,946	0.02%	Fixed		
Professional Mktg Fees		0.00%	\$25	0.00%	\$73	0.00%	\$98	0.00%	Fixed		
Total selling	\$1,415,642	20.23%	\$1,893,403	17.66%	\$1,899,002	18.82%	\$5,208,047	18.73%		6.93%	

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SIS's Detailed SGA: 2019 - October 2021

Schedule 15.1

	[1]		[2]		[3]				[4]	[4]	[4]
	2019		2020		2021 (thru Oct)		Total		Fixed / Variable	Variable as a % of revenue	Notes
	Amount	%	Amount	%	Amount	%	Amount	%			
General and admin:											
Salaries/Employees	\$267,488	3.82%	\$356,501	3.32%	\$516,607	5.12%	\$1,140,596	4.10%	Essentially fixed	0.20%	Consists of IT, HR/Payroll, Recruiting, Accounting, COO and Account Managers. If SIS added approximately 2 Account Managers at approximately \$50,000 each, or \$100,000 in total wages, this would approximate 0.14% of the maximum annual lost EndoWrist repair revenue of approximately \$71.2 million as shown on Schedule 2.0. For purposes of my analysis, I use 0.20% as variable.
Payroll Tax FICA	\$192,098	2.75%	\$272,758	2.54%	\$273,616	2.71%	\$738,472	2.66%	Variable	0.40%	Calculated as (2.66% Payroll Tax FICA / (7.31% Wages - Sales + 0.67% Sales - Bonus + 4.10% Salaries/Employees + 2.65% Salaries/Officers + 0.10% Salaries Office AZ) *(2.00% Wages - Sales + 0.20% Salaries/Employees) as I understand this relates to all selling, general and administrative wages and bonuses paid.
Salaries/Officers	\$254,886	3.64%	\$291,238	2.72%	\$190,923	1.89%	\$737,047	2.65%	Fixed		
Travel	\$234,380	3.35%	\$173,676	1.62%	\$248,886	2.47%	\$656,942	2.36%	Partially variable	1.00%	Large portion of current expenses is related to technical assistance or educational travel. For purposes of my analysis, treat this as variable.
Telephone	\$30,596	0.44%	\$38,251	0.36%	\$31,391	0.31%	\$100,238	0.36%	Fixed		
Seminars/Conferences	\$49,859	0.71%	\$10,400	0.10%	\$23,376	0.23%	\$83,635	0.30%	Fixed		
Payroll Tax - Other	\$18,828	0.27%	\$24,850	0.23%	\$33,876	0.34%	\$77,554	0.28%	Variable	0.04%	Calculated as (0.28% Payroll Tax - Other / (7.31% Wages - Sales + 0.67% Sales - Bonus + 4.10% Salaries/Employees + 2.65% Salaries/Officers + 0.10% Salaries Office AZ) *(2.00% Wages - Sales + 0.20% Salaries/Employees) as I understand this relates to selling, general and administrative wages and bonuses paid.
Utilities	\$24,226	0.35%	\$22,605	0.21%	\$26,145	0.26%	\$72,976	0.26%	Fixed	0.26%	For purposes of my analysis, I treat this as variable.
Bad Debts	\$23,805	0.34%	\$20,000	0.19%	\$2,164	0.02%	\$45,969	0.17%	Fixed		
Employee Recruitment	\$6,892	0.10%	\$5,287	0.05%	\$24,267	0.24%	\$36,446	0.13%	Variable	0.13%	
Moving Expense	\$8,590	0.12%		0.00%	\$19,669	0.19%	\$28,259	0.10%	Fixed		
Salaries Office AZ		0.00%		0.00%	\$26,428	0.26%	\$26,428	0.10%	Fixed		Represents one employee.
Medical Reimburse	\$5,120	0.07%	\$1,569	0.01%	\$7,107	0.07%	\$13,796	0.05%	Fixed		
Credit Card Fees	\$5,249	0.08%	\$5,247	0.05%	\$3,168	0.03%	\$13,664	0.05%	Fixed		
Vehicle	\$2,853	0.04%		0.00%	(\$453)	0.00%	\$2,400	0.01%	Fixed		
Bank Charges	\$777	0.01%	\$470	0.00%	\$825	0.01%	\$2,072	0.01%	Fixed		
Sales Tax	(\$227)	0.00%	\$1,509	0.01%	\$7	0.00%	\$1,289	0.00%	Fixed		
Sub-total G&A expenses	\$1,125,420	16.09%	\$1,224,361	11.42%	\$1,428,002	14.15%	\$3,777,783	13.58%		2.03%	
Total expenses	\$2,541,062	36.32%	\$3,117,764	29.07%	\$3,327,004	32.97%	\$8,985,830	32.31%	Rounded to	8.96%	
										9.00%	

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[1] Per SIS320176-188 at 176.

[2] Per SIS320922-935 at 922.

[3] Per SIS327629-636 at 629. Note: Per discussions with Greg Posdal, SIS's 2021 sales approximated \$12.4 million.

[4] Per discussions with Greg Posdal.

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Intuitive EndoWrist Instrument Average Selling Price, Units and Net Sales Dollars: 2020 - 2025

Schedule 16.0

	2020	2021	2022	2023	2024	2025	Total
ASP per unit							
[A] da Vinci S/Si	\$2,572	\$2,659	\$2,538	\$2,538	\$2,538	\$2,538	\$2,588
[A] da Vinci X/Xi	\$2,542	\$2,657	\$2,666	\$2,666	\$2,666	\$2,666	\$2,649
[A] Total ASP per unit	\$2,546	\$2,658	\$2,663	\$2,663	\$2,663	\$2,663	\$2,646
Units							
[B] da Vinci S/Si				3,839	1,928	1,077	90,439
[B] da Vinci X/Xi				422,719	455,982	437,186	2,327,724
[B] Total units				426,558	457,910	438,263	2,418,163
Net sales dollars							
[C] da Vinci S/Si				\$9,743,382	\$4,893,264	\$2,733,426	\$234,046,893
[C] da Vinci X/Xi				\$1,126,968,854	\$1,215,648,012	\$1,165,537,876	\$6,165,398,677
[C] Total net sales dollars				\$1,136,712,236	\$1,220,541,276	\$1,168,271,302	\$6,399,445,570

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 13.0. ASP per unit after June 2022 is based on Intuitive ASP through June 2022. Total ASP is calculated based on the amounts herein.

[B] Per Schedule 6.0.

[C] = [A] * [B]

Lanham Act Based on Scenario 2 - Unenforceable Contracts (2 Year X/Xi Delay): 2020 - 2025

Schedule 16.1

	2020	2021	2022	2023	2024	2025	Total
Intuitive's ASP per unit							
[A] da Vinci S/Si	\$2,572	\$2,659	\$2,538	\$2,538	\$2,538	\$2,538	\$2,594
[A] da Vinci X/Xi	\$2,542	\$2,657	\$2,666	\$2,666	\$2,666	\$2,666	\$2,666
Lost EndoWrist repair units							
[B] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[B] da Vinci X/Xi	0	0	9,114	35,153	41,711	14,542	100,520
[B] Total units	1,321	1,864	10,070	35,600	41,888	14,578	105,321
Net sales dollars (undiscounted)							
[C] da Vinci S/Si	\$3,397,612	\$4,956,376	\$2,426,328	\$1,134,486	\$449,226	\$91,368	\$12,455,396
[C] da Vinci X/Xi	\$0	\$0	\$24,297,924	\$93,717,898	\$111,201,526	\$38,768,972	\$267,986,320
[C] Total net sales dollars	\$3,397,612	\$4,956,376	\$26,724,252	\$94,852,384	\$111,650,752	\$38,860,340	\$280,441,716
[D] Discount %					12%	12%	
[E] Discount period					0.5	1.5	
[F] Discount factor	1.00000	1.00000	1.00000	1.00000	0.94491	0.84367	
[G] Discounted net sales dollars	\$3,397,612	\$4,956,376	\$26,724,252	\$94,852,384	\$105,499,912	\$32,785,303	\$268,215,839

Lanham Act Based on Scenario 2 - Unenforceable Contracts (2 Year X/Xi Delay): 2020 - 2025 Schedule 16.1

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 13.0. ASP per unit after June 2022 is based on Intuitive ASP through June 2022. Total ASP is calculated based on the amounts herein.

[B] Per Schedule 4.2.

[C] = **[A]** * **[B]**

[D] For the GICS 35101010, Health Care Equipment & Supplies, Duff and Phelps - Cost of Capital Composite, September 30, 2022, the average SIC/GICS Composite WACC (weighted average cost of capital) is 9.2% and median WACC is 8.9%. For the small composite, the WACC is 11.1% to 11.2% (CRSP Decile). For purposes of my analysis I use 12%, which is conservative. Note: The projections after 2022 do not include growth, therefore the discount rate would likely be less.

[E] Calculated using the mid-year convention to January 1, 2024, the approximate date of trial.

[F] = $(1 + \text{[H]})^{\text{[I]}}$, rounded to 5 decimals.

[G] = Net sales dollars (undiscounted) per **[C]** * **[F]**

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Lanham Act Based on Scenario 2 - Unenforceable Contracts (1 Year X/Xi Delay): 2020 - 2025 Schedule 16.2

	2020	2021	2022	2023	2024	2025	Total
Intuitive's ASP per unit							
[A] da Vinci S/Si	\$2,572	\$2,659	\$2,538	\$2,538	\$2,538	\$2,538	\$2,594
[A] da Vinci X/Xi	\$2,542	\$2,657	\$2,666	\$2,666	\$2,666	\$2,666	\$2,665
Lost EndoWrist repair units							
[B] da Vinci S/Si	1,321	1,864	956	447	177	36	4,801
[B] da Vinci X/Xi	0	8,646	30,379	49,215	41,711	14,542	144,493
[B] Total units	1,321	10,510	31,335	49,662	41,888	14,578	149,294
Net sales dollars (undiscounted)							
[C] da Vinci S/Si	\$3,397,612	\$4,956,376	\$2,426,328	\$1,134,486	\$449,226	\$91,368	\$12,455,396
[C] da Vinci X/Xi	\$0	\$22,972,422	\$80,990,414	\$131,207,190	\$111,201,526	\$38,768,972	\$385,140,524
[C] Total net sales dollars	\$3,397,612	\$27,928,798	\$83,416,742	\$132,341,676	\$111,650,752	\$38,860,340	\$397,595,920
[D] Discount %					12%	12%	
[E] Discount period					0.5	1.5	
[F] Discount factor	1.00000	1.00000	1.00000	1.00000	0.94491	0.84367	
[G] Discounted net sales dollars	\$3,397,612	\$27,928,798	\$83,416,742	\$132,341,676	\$105,499,912	\$32,785,303	\$385,370,043

Lanham Act Based on Scenario 2 - Unenforceable Contracts (1 Year X/Xi Delay): 2020 - 2025 Schedule 16.2

NOTES / SOURCES:

Note: Any minor differences are due to rounding.

[A] Per Schedule 13.0. ASP per unit after June 2022 is based on Intuitive ASP through June 2022. Total ASP is calculated based on the amounts herein.

[B] Per Schedule 4.5.

[C] = **[A]** * **[B]**

[D] For the GICS 35101010, Health Care Equipment & Supplies, Duff and Phelps - Cost of Capital Composite, September 30, 2022, the average SIC/GICS Composite WACC (weighted average cost of capital) is 9.2% and median WACC is 8.9%. For the small composite, the WACC is 11.1% to 11.2% (CRSP Decile). For purposes of my analysis I use 12%, which is conservative. Note: The projections after 2022 do not include growth, therefore the discount rate would likely be less.

[E] Calculated using the mid-year convention to January 1, 2024, the approximate date of trial.

[F] = $(1 + \text{[H]})^{\text{[I]}}$, rounded to 5 decimals.

[G] = Net sales dollars (undiscounted) per **[C]** * **[F]**

EXHIBIT 5

to

**PAUL D. BRACHMAN DECLARATION IN SUPPORT OF
DEFENDANT'S MOTION IN LIMINE NO. 2
TO EXCLUDE DEUTSCHE BANK ANALYST REPORTS
AND RELATED TESTIMONY**

1
2 UNITED STATES DISTRICT COURT
3 FOR THE NORTHERN DISTRICT OF CALIFORNIA
4 SAN FRANCISCO DIVISION

5 Case No: 3:21-cv-03496VC

6 - - - - -x
7 SURGICAL INSTRUMENT SERVICE COMPANY, INC.,
8 Plaintiff,
9 -against-
10 INTUITIVE SURGICAL, INC.,
11 Defendant.

12 - - - - -x
13 Virtual Zoom Deposition
14 March 20, 2023
15 9:00 a.m.

16
17 VIRTUAL VIDEO DEPOSITION of RUSSELL LAMB,
18 Ph.D., in the above-entitled action, held at
19 the above time and place, taken before Jeremy
20 Richman, a Shorthand Reporter and Notary
21 Public of the State of New York, pursuant to
22 the Federal Rules of Civil Procedure, and
23 stipulations between Counsel.

24
25 * * *

<p>1 R. LAMB</p> <p>2 time to review the paragraph. 10:46:42</p> <p>3 A. Okay, yes, I do. 10:46:53</p> <p>4 Q. Okay. And so it seems to be 10:46:54</p> <p>5 that you're citing this testimony from 10:47:00</p> <p>6 the notion that these folks couldn't 10:47:03</p> <p>7 discern any differences between, know, 10:47:05</p> <p>8 for example, Rebotix repaired 10:47:09</p> <p>9 EndoWrists and the EndoWrists that were 10:47:10</p> <p>10 from Intuitive; is that right? 10:47:13</p> <p>11 A. Well, you're paraphrasing, 10:47:17</p> <p>12 and I want to be careful paraphrasing, 10:47:20</p> <p>13 so I just incorporate my reference to 10:47:23</p> <p>14 statements that are there. They say 10:47:26</p> <p>15 what they say. 10:47:27</p> <p>16 But there is a statement with 10:47:28</p> <p>17 respect to, very similar to what you 10:47:30</p> <p>18 said from Mr. Harrich on page 81 in 10:47:34</p> <p>19 paragraph 136. Mr. McDonald's 10:47:39</p> <p>20 statement is over on page 82 towards 10:47:45</p> <p>21 the end of the paragraph, and his 10:47:47</p> <p>22 statement was that surgeons "couldn't 10:47:49</p> <p>23 tell any difference between the 10:47:53</p> <p>24 repaired EndoWrist surgical instruments 10:47:54</p> <p>25 and other instruments that is came 10:47:56</p> <p style="text-align: right;">Page 86</p>	<p>1 R. LAMB</p> <p>2 antitrust product in geographic markets 10:49:08</p> <p>3 in which the EndoWrist instruments are 10:49:10</p> <p>4 sold, that is the market for repair and 10:49:12</p> <p>5 replacement of EndoWrist instruments. 10:49:16</p> <p>6 Or the anticompetitive conduct arising 10:49:18</p> <p>7 from the alleged misconduct here. 10:49:21</p> <p>8 The fact that other economic 10:49:24</p> <p>9 agents that operate in those markets 10:49:30</p> <p>10 may decide that they don't want to 10:49:34</p> <p>11 purchase EndoWrist's repair or 10:49:37</p> <p>12 refurbishment reprocessing services, 10:49:44</p> <p>13 but would rather purchase new 10:49:47</p> <p>14 replacement EndoWrist instruments, 10:49:49</p> <p>15 doesn't change the fact that they are 10:49:50</p> <p>16 both in the same relevant antitrust 10:49:52</p> <p>17 product market and they are in fact 10:49:55</p> <p>18 economic substitutes for each other, 10:49:58</p> <p>19 which is the scope of my opinion. 10:49:59</p> <p>20 And so, you know, there's a 10:50:01</p> <p>21 saying in economics that markets 10:50:06</p> <p>22 operate because of differences of 10:50:08</p> <p>23 opinion. In other words, if all 10:50:11</p> <p>24 consumers and all agents were the same, 10:50:14</p> <p>25 it would be impossible to have a 10:50:16</p> <p style="text-align: right;">Page 88</p>
<p>1 R. LAMB</p> <p>2 directly from Intuitive." And I just, 10:47:57</p> <p>3 I would rather let the English plain 10:48:01</p> <p>4 words speak for themselves. 10:48:03</p> <p>5 Q. Okay. So then my question 10:48:10</p> <p>6 would be, have you reviewed any 10:48:13</p> <p>7 evidence that is different from what 10:48:16</p> <p>8 Mr. Harrich and Mr. McDonald testified 10:48:20</p> <p>9 to, meaning have you reviewed any, you 10:48:24</p> <p>10 know, testimony from hospitals or 10:48:26</p> <p>11 doctors that express concerns about the 10:48:28</p> <p>12 EndoWrists that were serviced by third 10:48:34</p> <p>13 parties? 10:48:37</p> <p>14 A. I don't recall whether I've 10:48:37</p> <p>15 seen that evidence or not. There may 10:48:40</p> <p>16 be such evidence in the record. It 10:48:43</p> <p>17 wouldn't change the opinions or 10:48:46</p> <p>18 conclusions that I've reached. And let 10:48:47</p> <p>19 me be very clear about those opinions 10:48:49</p> <p>20 or conclusions, which are with respect 10:48:51</p> <p>21 to the relevant antitrust product and 10:48:53</p> <p>22 geographic markets in which the Da 10:48:55</p> <p>23 Vinci robot is sold; that is, the 10:48:59</p> <p>24 market for MIST surgical robots in the 10:49:02</p> <p>25 United States, or the relevant 10:49:05</p> <p style="text-align: right;">Page 87</p>	<p>1 R. LAMB</p> <p>2 market, because everybody would want to 10:50:18</p> <p>3 do the same thing, buy or sell at the 10:50:20</p> <p>4 same time. So the fact that economic 10:50:23</p> <p>5 agents have different views doesn't 10:50:25</p> <p>6 change the fact that the relevant 10:50:28</p> <p>7 antitrust product market that I defined 10:50:33</p> <p>8 is correct. 10:50:34</p> <p>9 MS. BASS: We've been going 10:50:41</p> <p>10 about an hour, can we take a break? 10:50:42</p> <p>11 THE WITNESS: Sure, do you 10:50:45</p> <p>12 want to take 10 minutes, Counselor? 10:50:46</p> <p>13 Just so I know. 10:50:48</p> <p>14 MS. BASS: Let's go off the 10:50:48</p> <p>15 record. 10:50:50</p> <p>16 THE VIDEOGRAPHER: We are 10:50:50</p> <p>17 going off the record, the time is 10:50:51</p> <p>18 10:50 a.m. 10:50:53</p> <p>19 (Recess.) 10:50:56</p> <p>20 THE VIDEOGRAPHER: We are 11:03:45</p> <p>21 going back on the record. The time 11:03:47</p> <p>22 is 11:03 a.m. 11:03:49</p> <p>23 Q. Dr. Lamb, we were talking 11:03:50</p> <p>24 about the Deutsche Bank report before 11:03:55</p> <p>25 we broke, and I think you actually cite 11:03:58</p> <p style="text-align: right;">Page 89</p>

<p>1 R. LAMB</p> <p>2 two Deutsche Bank reports in your 11:04:02</p> <p>3 report. Those were written by a man 11:04:04</p> <p>4 named Emron Zafar. Does that sound 11:04:09</p> <p>5 familiar to you? 11:04:17</p> <p>6 A. First, I'm trying to find the 11:04:17</p> <p>7 report and put it in front of my eyes. 11:04:19</p> <p>8 There we go. I don't recall the name 11:04:23</p> <p>9 without looking at the report. I don't 11:04:25</p> <p>10 believe I give the name in my expert 11:04:33</p> <p>11 report, but it's possible. 11:04:34</p> <p>12 Just so the record is clear 11:04:37</p> <p>13 about how I view the reports is 11:04:39</p> <p>14 whoever's name is attached as an author 11:04:42</p> <p>15 is secondary, to me, to the imprimatur 11:04:45</p> <p>16 of Deutsche Bank. That is because 11:04:51</p> <p>17 they're the ones that are offering 11:04:54</p> <p>18 investment advice and have some other 11:04:56</p> <p>19 legal obligations. But if you 11:04:58</p> <p>20 represent that's the name of the person 11:05:00</p> <p>21 who's listed as author, I'll accept 11:05:02</p> <p>22 that. 11:05:04</p> <p>23 Q. Okay, thank you. Were you 11:05:04</p> <p>24 aware that Mr. Zafar was deposed in 11:05:06</p> <p>25 this case? 11:05:08</p> <p style="text-align: right;">Page 90</p>	<p>1 R. LAMB</p> <p>2 majority (approximately 58 percent) of 11:06:42</p> <p>3 segment sales at risk of competitive 11:06:47</p> <p>4 pressures." 11:06:52</p> <p>5 Do you see that sentence? 11:06:53</p> <p>6 A. I do. 11:06:54</p> <p>7 Q. And my question for you is if 11:06:55</p> <p>8 you recall how Deutsche reached that 11:06:58</p> <p>9 58 percent number. 11:07:04</p> <p>10 A. I would have to go back and 11:07:07</p> <p>11 look at the document. I don't recall 11:07:10</p> <p>12 as I sit here today. 11:07:11</p> <p>13 Q. And do you recall, at the 11:07:12</p> <p>14 time that you saw the document, if you 11:07:13</p> <p>15 tried to do any sort of checking of the 11:07:15</p> <p>16 methodology of Deutsche Bank, if that 11:07:21</p> <p>17 makes sense? 11:07:23</p> <p>18 A. Typically, it wouldn't be 11:07:24</p> <p>19 possible to check the methodology, 11:07:25</p> <p>20 because they're not going to disclose 11:07:27</p> <p>21 the methodology. They'll just disclose 11:07:28</p> <p>22 the results. They wouldn't want to 11:07:31</p> <p>23 give their competitors an insight into 11:07:34</p> <p>24 how they reached opinions about numbers 11:07:37</p> <p>25 like that. 11:07:39</p> <p style="text-align: right;">Page 92</p>
<p>1 R. LAMB</p> <p>2 A. I was not. 11:05:09</p> <p>3 Q. His testimony wasn't listed 11:05:10</p> <p>4 on your materials relied upon, so I 11:05:13</p> <p>5 just wanted to check. 11:05:15</p> <p>6 A. No, I don't believe it was. 11:05:17</p> <p>7 Q. Okay, that was going to be my 11:05:20</p> <p>8 next question. So I assume you haven't 11:05:21</p> <p>9 reviewed his deposition transcript, 11:05:23</p> <p>10 correct? 11:05:26</p> <p>11 A. No. 11:05:27</p> <p>12 Q. If you could look at 11:05:27</p> <p>13 paragraph 55 of your report. 11:05:38</p> <p>14 A. Paragraph 55? 11:05:43</p> <p>15 Q. Yeah, 55. 11:05:44</p> <p>16 A. Okay, give me a second. 11:05:48</p> <p>17 Okay. 11:06:11</p> <p>18 Q. Okay, so towards the end of 11:06:11</p> <p>19 that paragraph there's a sentence that 11:06:13</p> <p>20 says, Furthermore, Deutsche Bank 11:06:16</p> <p>21 estimated that once repairs of 11:06:20</p> <p>22 EndoWrist instruments used with model 11:06:24</p> <p>23 X/Xi Da Vinci robots become available, 11:06:27</p> <p>24 "Intuitive's top line exposure will 11:06:34</p> <p>25 increase dramatically - rendering a 11:06:38</p> <p style="text-align: right;">Page 91</p>	<p>1 R. LAMB</p> <p>2 So I doubt it would be 11:07:40</p> <p>3 possible from the document to check the 11:07:41</p> <p>4 methodology. It's the number or the 11:07:43</p> <p>5 opinion. And I just note one thing I 11:07:44</p> <p>6 want to say about the Deutsche Bank 11:07:48</p> <p>7 reports. You asked about a deposition 11:07:50</p> <p>8 from the author of the reports, and I 11:07:51</p> <p>9 note that at the time that Deutsche 11:07:54</p> <p>10 Bank wrote its analyst report, its 11:07:58</p> <p>11 incentives would be in a different 11:08:00</p> <p>12 position than that of a deponent once a 11:08:03</p> <p>13 lawsuit has been filed which might be, 11:08:08</p> <p>14 might create a different outcome for 11:08:10</p> <p>15 the stock of a company that an analyst 11:08:13</p> <p>16 had offered an opinion about. So I 11:08:17</p> <p>17 just note that it typically, one of the 11:08:19</p> <p>18 things that's useful about analyst 11:08:22</p> <p>19 reports like this, that are historical 11:08:26</p> <p>20 in nature, is that they predate any 11:08:28</p> <p>21 litigation that we're looking at in a 11:08:32</p> <p>22 way that makes the, makes the analysis 11:08:36</p> <p>23 more objective. 11:08:41</p> <p>24 So I haven't seen the 11:08:42</p> <p>25 deposition, but I just thought of that 11:08:43</p> <p style="text-align: right;">Page 93</p>

<p>1 R. LAMB</p> <p>2 after you answered the prior question, 11:08:46</p> <p>3 but I want to make sure my answer is 11:08:48</p> <p>4 clear with respect to that. 11:08:52</p> <p>5 Q. Thank you. So continuing in 11:08:53</p> <p>6 that paragraph, but going back to the 11:08:54</p> <p>7 beginning of it. 11:08:55</p> <p>8 A. Uh-huh. 11:08:56</p> <p>9 Q. There's a sentence here that 11:08:57</p> <p>10 says, Deutsche Bank further noted that, 11:08:59</p> <p>11 based on its research, and there's a 11:09:04</p> <p>12 quote, "FDA action to stymie usage of 11:09:09</p> <p>13 repaired instruments is highly 11:09:13</p> <p>14 unlikely," and the sentence continues. 11:09:15</p> <p>15 And my question for you is if 11:09:19</p> <p>16 you're, in the course of your opinion, 11:09:23</p> <p>17 are you relying on Deutsche Bank for 11:09:24</p> <p>18 what its view of the, kind of, 11:09:26</p> <p>19 regulatory landscape was with respect 11:09:31</p> <p>20 to the services offered by the third 11:09:33</p> <p>21 parties? 11:09:35</p> <p>22 A. I think the answer is it's a 11:09:35</p> <p>23 piece of evidence. It's one piece of 11:09:48</p> <p>24 evidence, certainly Mr. Phillips's 11:09:50</p> <p>25 report is, to me, more dispositive than 11:09:53</p> <p style="text-align: right;">Page 94</p>	<p>1 R. LAMB</p> <p>2 reaching the opinions or conclusions 11:11:02</p> <p>3 that I reached. 11:11:04</p> <p>4 Q. So for your opinions and 11:11:04</p> <p>5 conclusions in this case, what role 11:11:07</p> <p>6 does FDA clearance play in your 11:11:12</p> <p>7 opinions, so, you know, for example, 11:11:15</p> <p>8 are you making any assumptions about 11:11:17</p> <p>9 whether the services of the third 11:11:19</p> <p>10 parties required FDA clearance? 11:11:22</p> <p>11 MR. MCCAULEY: Objection to 11:11:25</p> <p>12 form. 11:11:26</p> <p>13 A. Am I -- I'm sorry, could you 11:11:26</p> <p>14 repeat the last sentence in that 11:11:30</p> <p>15 question? 11:11:32</p> <p>16 Q. Sure, are you making any 11:11:32</p> <p>17 assumptions about whether or not the 11:11:34</p> <p>18 services of the third parties in 11:11:35</p> <p>19 resetting EndoWrists required FDA 11:11:38</p> <p>20 clearance? 11:11:40</p> <p>21 A. My understanding is the 11:11:40</p> <p>22 relevant period here starts in 2019, 11:11:54</p> <p>23 and continues to the present, so the 11:11:58</p> <p>24 FDA's regulatory position during the 11:11:59</p> <p>25 relevant period changed, as you know. 11:12:01</p> <p style="text-align: right;">Page 96</p>
<p>1 R. LAMB</p> <p>2 Deutsche Bank's statements. But 11:09:58</p> <p>3 they're consistent, I believe, with the 11:10:02</p> <p>4 views that Mr. Phillips reached. So, 11:10:04</p> <p>5 you know, I come back to the same thing 11:10:07</p> <p>6 I said earlier today. You could pick 11:10:09</p> <p>7 that piece of evidence out of my 11:10:11</p> <p>8 report, and doing so wouldn't change 11:10:13</p> <p>9 the opinions or conclusions that I 11:10:16</p> <p>10 reached. 11:10:20</p> <p>11 In evaluating the opinion 11:10:20</p> <p>12 with respect to relevant market here, 11:10:23</p> <p>13 relevant markets, and the opinions with 11:10:25</p> <p>14 respect to relevant markets, if that 11:10:27</p> <p>15 paragraph were removed from my report, 11:10:32</p> <p>16 I would still reach the same opinion. 11:10:34</p> <p>17 Q. And do you have any 11:10:37</p> <p>18 understanding of how Deutsche Bank 11:10:39</p> <p>19 reached its ability to have this 11:10:42</p> <p>20 statement in the report that FDA action 11:10:45</p> <p>21 to stymie usage of repaired instruments 11:10:48</p> <p>22 is highly unlikely? 11:10:51</p> <p>23 A. I don't have an understanding 11:10:53</p> <p>24 of how Deutsche Bank operates 11:10:56</p> <p>25 internally. It wasn't relevant to 11:10:59</p> <p style="text-align: right;">Page 95</p>	<p>1 R. LAMB</p> <p>2 During a large part of the relevant 11:12:03</p> <p>3 period, my understanding is there was 11:12:06</p> <p>4 no FDA conclusion that, to sell the 11:12:06</p> <p>5 reprocessed, or to provide the repair 11:12:09</p> <p>6 and refurbishment services and provide 11:12:12</p> <p>7 the reprocessed EndoWrist instruments, 11:12:15</p> <p>8 that you needed the FDA clearance, and 11:12:18</p> <p>9 then later there was. 11:12:21</p> <p>10 But the fact is that a lot of 11:12:23</p> <p>11 them were sold by SIS, a lot of the 11:12:25</p> <p>12 repair and reprocessing, refurbishment 11:12:27</p> <p>13 services were sold by SIS, And by other 11:12:30</p> <p>14 third parties. And so in reaching the 11:12:34</p> <p>15 opinions or conclusions I've reached 11:12:37</p> <p>16 here with respect to relevant market 11:12:39</p> <p>17 and anticompetitive effects, let me be 11:12:43</p> <p>18 careful. The opinions I've reached 11:12:47</p> <p>19 with respect to relevant markets and 11:12:49</p> <p>20 the anticompetitive effect of the 11:12:51</p> <p>21 challenged conduct, the actual history 11:12:54</p> <p>22 of sales in the marketplace is 11:12:57</p> <p>23 sufficient to establish that the effect 11:13:01</p> <p>24 of limiting those sales of repair and 11:13:07</p> <p>25 refurbishment services would have or 11:13:11</p> <p style="text-align: right;">Page 97</p>

EXHIBIT 6

to

**PAUL D. BRACHMAN DECLARATION IN SUPPORT OF
DEFENDANT'S MOTION IN LIMINE NO. 2
TO EXCLUDE DEUTSCHE BANK ANALYST REPORTS
AND RELATED TESTIMONY**

1
2 UNITED STATES DISTRICT COURT
3 FOR THE NORTHERN DISTRICT OF CALIFORNIA
4 Case No. 3:21-cv-03825-VC

5 -----x
6 IN RE: DA VINCI SURGICAL ROBOT LITIGATION,
7 _____

8 THIS DOCUMENT RELATES TO:
9 ALL CASES
10 -----x

11 November 1, 2022

12 12:45 p.m.

13 HIGHLY CONFIDENTIAL

14 Videotaped deposition of IMRON
15 ZAFAR, pursuant to subpoena, before Jineen
16 Pavesi, a Registered Professional
17 Reporter, Registered Merit Reporter,
18 Certified Realtime Reporter and Notary
19 Public of the State of New York, via Zoom,
20 with all other parties in person at Cohen
21 Milstein, 88 Pine Street, New York, New
22 York.
23
24
25

<p style="text-align: right;">Page 2</p> <p>1 2 A P P E A R A N C E S : 3 COHEN MILSTEIN SELLERS & TOLL PLLC 88 Pine Street, 14th Floor 4 New York, New York 10005 Attorneys for Plaintiffs and Proposed 5 Class BY: CHRISTOPHER BATEMAN, ESQ. 6 cbateman@cohenmilstein.com 7 HALEY GUILIANO LLP 8 116 West Hubbard, Unit 20 Chicago, Illinois 60654 9 Attorneys for Surgical Instrument Service Company 10 BY: DONNY SAMPORNA, ESQ. donny.samporna@ghlaw.com 11 (via telephone) 12 SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP 13 One Manhattan West New York, New York 10001 14 Attorneys for Intuitive Surgical, Inc. 15 BY: DOUGLAS DeBAUGH, ESQ. douglas.debaugh@skadden.com 16 17 DEUTSCHE BANK AG FILIALE NEW YORK LITIGATION & REGULATORY 18 ENFORCEMENT 1 Columbus Circle 19 New York, New York Attorneys for Witness 20 BY: SARAH SCHOENBACK, ESQ. 21 ALSO PRESENT: 22 ANTON EVANGELISTA, The Video Technician 23 24 25</p>	<p style="text-align: right;">Page 4</p> <p>1 2 THE VIDEO TECHNICIAN: Good 3 afternoon, we are going on the record at 4 12:45 p.m. on November 1st, 2022. 5 Please note that the 6 microphones are sensitive and may pick up 7 whispering and private conversations. 8 Please mute your phones at this 9 time. 10 Audio and video recording will 11 continue to take place unless all parties 12 agree to go off the record. 13 This is media unit 1 of the 14 video recorded deposition of Imron Zafar 15 taken by counsel for plaintiffs in the 16 matter of In re Da Vinci Surgical Robot 17 Antitrust Litigation, filed in the United 18 States District Court for the Northern 19 District of California, Case No. 20 3:21-cv-03825-vc. 21 The location of the deposition 22 is Cohen Milstein Sellers & Toll, 88 Pine 23 Street in New York City. 24 My name is Anton Evangelista 25 representing Veritext and I am the</p>
<p style="text-align: right;">Page 3</p> <p>1 2 S T I P U L A T I O N S 3 4 IT IS HEREBY STIPULATED AND AGREED by 5 and between the Attorneys for the 6 respective parties hereto that filing and 7 sealing be and the same are hereby waived. 8 IT IS FURTHER STIPULATED AND AGREED 9 that all objections except as to the form 10 of the question, shall be reserved to the 11 time of the trial. 12 IT IS FURTHER STIPULATED AND AGREED 13 that the within examination may be signed 14 and sworn to before any notary public with 15 the same force and effect as though signed 16 and sworn to before this Court. 17 18 19 20 21 22 23 24 25</p>	<p style="text-align: right;">Page 5</p> <p>1 2 videographer; the court reporter is Jineen 3 Pavesi from the firm Veritext. 4 I am not authorized to 5 administer an oath, I am not related to 6 any party in this action nor am I 7 financially interested in the outcome. 8 If there are any objections to 9 proceeding, please state them at the time 10 of your appearance; counsel will be noted 11 on the stenographic record. 12 Will the court reporter please 13 swear in the witness and counsel may 14 proceed. 15 I M R O N Z A F A R, 16 having first been duly sworn by a Notary 17 Public of the State of New York, was 18 examined and testified as follows: 19 EXAMINATION BY 20 MR. BATEMAN: 21 Q. Thank you, Mr. Zafar, for being 22 here today, my name is Chris Bateman, I am 23 an attorney for the hospital plaintiffs, 24 class plaintiffs in this case, against 25 Intuitive Surgical.</p>

<p style="text-align: right;">Page 10</p> <p>1 ZAFAR</p> <p>2 all about today's deposition?</p> <p>3 A. No.</p> <p>4 Q. Did you do anything to prepare</p> <p>5 for the deposition today?</p> <p>6 A. Beyond, you know, having</p> <p>7 consultation with Sarah, the attorney</p> <p>8 accompanying me, just, you know, around</p> <p>9 what to expect.</p> <p>10 MS. SCHOENBACH: You don't need</p> <p>11 to go into specifics.</p> <p>12 Q. That's fine, I don't want you</p> <p>13 to go into specifics of what</p> <p>14 communications you had with your counsel,</p> <p>15 just to clarify.</p> <p>16 But did you meet with your</p> <p>17 counsel, Sarah, in preparation for the</p> <p>18 deposition?</p> <p>19 THE WITNESS: Do I need to</p> <p>20 answer that?</p> <p>21 MS. SCHOENBACH: Yes.</p> <p>22 A. Virtually, telephonically, but</p> <p>23 not in person.</p> <p>24 Q. Okay.</p> <p>25 A. Except for a few minutes before</p>	<p style="text-align: right;">Page 12</p> <p>1 ZAFAR</p> <p>2 compete.</p> <p>3 I focus specifically on medical</p> <p>4 technology, as I mentioned earlier.</p> <p>5 Q. What was the last part, you</p> <p>6 focus on --</p> <p>7 A. Medical technology, medical</p> <p>8 devices, supplies, equipment.</p> <p>9 Q. What's your title at Deutsche</p> <p>10 Bank currently?</p> <p>11 A. I am an equity research analyst</p> <p>12 with the corporate title of</p> <p>13 vice-president.</p> <p>14 Q. How long have you held that</p> <p>15 position?</p> <p>16 A. My current position at Deutsche</p> <p>17 Bank?</p> <p>18 Q. Yes.</p> <p>19 A. You know, I'm going to -- I</p> <p>20 can give you rough date ranges, but I</p> <p>21 don't remember exact dates off the top of</p> <p>22 my head to be honest.</p> <p>23 But I believe I just</p> <p>24 celebrated, if I'm not mistaken, my third</p> <p>25 anniversary at DB.</p>
<p style="text-align: right;">Page 11</p> <p>1 ZAFAR</p> <p>2 this meeting today.</p> <p>3 Q. Again, without getting into the</p> <p>4 contents of what you discussed, did you</p> <p>5 review any documents in preparation for</p> <p>6 the deposition that refreshed your</p> <p>7 recollection of events?</p> <p>8 A. I personally did not review any</p> <p>9 documents.</p> <p>10 The only thing I did was I</p> <p>11 looked at my log of research reports in</p> <p>12 terms of getting the information to my</p> <p>13 attorney, but, no, I did not read any</p> <p>14 documents, no.</p> <p>15 Q. Who is your current employer?</p> <p>16 A. Deutsche Bank.</p> <p>17 Q. What is Deutsche Bank?</p> <p>18 A. Deutsche Bank is a global</p> <p>19 investment bank with businesses across the</p> <p>20 board in financial services.</p> <p>21 I work in the equity research</p> <p>22 division, so I provide institutional</p> <p>23 investors with investment research on</p> <p>24 publicly-traded companies and, you know,</p> <p>25 markets in which these public companies</p>	<p style="text-align: right;">Page 13</p> <p>1 ZAFAR</p> <p>2 Q. In those three or so years,</p> <p>3 have you had that same title of equity</p> <p>4 research analyst the whole time?</p> <p>5 A. Yes.</p> <p>6 Q. Have you been a vice-president</p> <p>7 that whole time?</p> <p>8 A. Yes.</p> <p>9 Q. What are your responsibilities</p> <p>10 -- well, withdrawn.</p> <p>11 I think you said earlier that</p> <p>12 you provide institutional investors with</p> <p>13 research.</p> <p>14 What kind of research do you</p> <p>15 provide?</p> <p>16 A. That's a broad question.</p> <p>17 We kind of operate under the</p> <p>18 mosaic theory, so any intelligence about</p> <p>19 the healthcare market broadly and then,</p> <p>20 you know, whether it's Medicare</p> <p>21 reimbursement policy, FDA approval</p> <p>22 pathways, things like that, all the way</p> <p>23 down to quantifying patient populations</p> <p>24 for a certain disease group and therefore</p> <p>25 addressable market for certain therapies</p>

<p style="text-align: right;">Page 14</p> <p>1 ZAFAR</p> <p>2 and devices.</p> <p>3 And then following down further</p> <p>4 to mostly focused on public companies that</p> <p>5 compete in those categories; again, the</p> <p>6 gamut of implantable devices, commoditized</p> <p>7 supplies like syringes to imaging</p> <p>8 equipment to surgical robotics and</p> <p>9 surgical instruments, and, you know, in</p> <p>10 addition to the companies formally</p> <p>11 covered, we obviously keep abreast of the</p> <p>12 competitive landscape, emerging</p> <p>13 technologies that would affect the profile</p> <p>14 and stock performance of companies that I</p> <p>15 do cover.</p> <p>16 So kind of pretty broad, what</p> <p>17 that entails is pretty broad, I would say.</p> <p>18 Q. You said that you focus on</p> <p>19 public companies.</p> <p>20 Has your focus in your three</p> <p>21 years at Deutsche Bank, your current</p> <p>22 employment at Deutsche Bank, has your</p> <p>23 focus been on U.S. companies?</p> <p>24 A. Has my focus -- directly</p> <p>25 speaking, yes.</p>	<p style="text-align: right;">Page 16</p> <p>1 ZAFAR</p> <p>2 centimeter incisions instead, therefore</p> <p>3 the obvious benefits of recovery,</p> <p>4 cosmesis, are better.</p> <p>5 Q. You also mentioned surgical</p> <p>6 instruments earlier.</p> <p>7 What types of surgical</p> <p>8 instruments have you covered?</p> <p>9 A. Such a broad term, but by</p> <p>10 surgical instruments that could mean</p> <p>11 conventional laparoscopic tools, scalpels,</p> <p>12 vessel sealers, endoscopic staplers,</p> <p>13 intravascular imaging, navigation, things</p> <p>14 like that.</p> <p>15 Q. For soft tissue minimally</p> <p>16 invasive robotic surgery, what companies</p> <p>17 have you covered in that area?</p> <p>18 A. Well, there's, you know, really</p> <p>19 only one company, which is Intuitive</p> <p>20 Surgical and they have been a monopolist</p> <p>21 in that space, more or less.</p> <p>22 There is surgical robotics,</p> <p>23 people use that term liberally and there</p> <p>24 are some companies that -- consider</p> <p>25 themselves robotic companies, I've done</p>
<p style="text-align: right;">Page 15</p> <p>1 ZAFAR</p> <p>2 So the way the division of</p> <p>3 labor works at our firm is we have --</p> <p>4 yes, my team focuses on officially I think</p> <p>5 North America broadly, but practically,</p> <p>6 yes, all of our companies are United</p> <p>7 States-based.</p> <p>8 With one exception; Medtronic I</p> <p>9 believe is officially domiciled in</p> <p>10 Ireland, it's a P.L.C., they did a --</p> <p>11 whatever, but I believe with that</p> <p>12 exception, to my knowledge, they are all</p> <p>13 U.S. incorporated.</p> <p>14 Q. You mentioned surgical robotics</p> <p>15 as one area that you have covered; what do</p> <p>16 you mean by surgical robotics?</p> <p>17 A. Surgical robotics are</p> <p>18 technology platforms that assist a surgeon</p> <p>19 in performing surgeries, soft tissue</p> <p>20 surgeries and orthopedic surgeries, less</p> <p>21 invasively.</p> <p>22 So being able to do, for</p> <p>23 example, a hysterectomy without making a</p> <p>24 huge incision in the abdomen, you can do</p> <p>25 it with, you know, 2 centimeter, a few</p>	<p style="text-align: right;">Page 17</p> <p>1 ZAFAR</p> <p>2 very little work on those, so they're not</p> <p>3 really relevant in this conversation, a</p> <p>4 company like Transenterix that I've looked</p> <p>5 at very superficially, couldn't tell you</p> <p>6 much about it at all.</p> <p>7 Q. You said there is really only</p> <p>8 one company and that's a bit of a</p> <p>9 monopolist and that company is Intuitive</p> <p>10 Surgical?</p> <p>11 MR. DeBAUGH: Objection to</p> <p>12 form.</p> <p>13 A. That is correct and there are</p> <p>14 other -- well, I'm talking about to date.</p> <p>15 There is actually a company</p> <p>16 Medtronic who is doing the requisite</p> <p>17 clinical and regulatory work right now in</p> <p>18 the U.S. to garner FDA approval, so they</p> <p>19 are in development stage.</p> <p>20 They do have regulatory</p> <p>21 approvals in Europe, but de minimis work</p> <p>22 at this point.</p> <p>23 Q. What did you mean when you said</p> <p>24 Intuitive Surgical has been a monopolist</p> <p>25 in this situation?</p>

<p style="text-align: right;">Page 18</p> <p>1 ZAFAR</p> <p>2 MR. DeBAUGH: Objection to the</p> <p>3 form.</p> <p>4 A. In the literal sense of the</p> <p>5 word, meaning they're the only game in</p> <p>6 town.</p> <p>7 Q. I just want to talk about your</p> <p>8 educational experience briefly.</p> <p>9 What's your highest level of</p> <p>10 education?</p> <p>11 A. I have a bachelor of arts.</p> <p>12 Q. Where was that from?</p> <p>13 A. Amherst College.</p> <p>14 Q. When did you graduate from</p> <p>15 Amherst?</p> <p>16 A. 1999.</p> <p>17 Q. Can you walk me through your</p> <p>18 employment history since you received that</p> <p>19 B.A. just briefly.</p> <p>20 A. Sure.</p> <p>21 I am going to not be able to</p> <p>22 give you specific date ranges because I</p> <p>23 don't remember offhand, but I can give you</p> <p>24 the chronology.</p> <p>25 So out of college I spent</p>	<p style="text-align: right;">Page 20</p> <p>1 ZAFAR</p> <p>2 throughout all that time since you were at</p> <p>3 DLJ?</p> <p>4 A. Yes, with some gaps between</p> <p>5 jobs.</p> <p>6 MR. BATEMAN: I am going to</p> <p>7 introduce an exhibit here briefly.</p> <p>8 I'm introducing what I'm going</p> <p>9 to mark as Exhibit 111.</p> <p>10 (Plaintiffs' Exhibit 111,</p> <p>11 LinkedIn page, was marked for</p> <p>12 identification, as of this date.)</p> <p>13 Q. Mr. Zafar, do you recognize</p> <p>14 this document?</p> <p>15 A. I recognize the contents of it,</p> <p>16 yes.</p> <p>17 Q. What is this document?</p> <p>18 A. Printout of my LinkedIn page.</p> <p>19 Q. Does this look like an accurate</p> <p>20 copy of your LinkedIn page?</p> <p>21 A. Based on a cursory 30-second</p> <p>22 eyeballing of it, yes.</p> <p>23 Q. Feel free to take the time to</p> <p>24 review the document.</p> <p>25 (Witness perusing document.)</p>
<p style="text-align: right;">Page 19</p> <p>1 ZAFAR</p> <p>2 roughly a year doing clinical research at</p> <p>3 Harvard Medical School, Children's</p> <p>4 Hospital in Boston, after which I moved to</p> <p>5 New York and got a job in equity research</p> <p>6 at a firm called DLJ, which soon after my</p> <p>7 joining was acquired by at the time Credit</p> <p>8 Suisse First Boston.</p> <p>9 I left that firm involuntarily</p> <p>10 due to a broad restructuring, the market</p> <p>11 downturned because of 9/11, and thereafter</p> <p>12 started as an associate at Deutsche Bank</p> <p>13 covering healthcare.</p> <p>14 A few years later my boss left</p> <p>15 the firm, which compelled me to pursue an</p> <p>16 opportunity at Jefferies doing the same</p> <p>17 role in equity research, after which I</p> <p>18 moved to Suntrust, Suntrust Robinsonn</p> <p>19 Humphrey, the bank is now called Truist</p> <p>20 Securities, for what it's worth, spent a</p> <p>21 year-and-a-half roughly there, which</p> <p>22 preceded my current stint at Deutsche</p> <p>23 Bank.</p> <p>24 Q. Got it.</p> <p>25 Have you been an equity analyst</p>	<p style="text-align: right;">Page 21</p> <p>1 ZAFAR</p> <p>2 A. Printout pages 1 through 2, to</p> <p>3 the best of my knowledge, look accurate,</p> <p>4 dates, et cetera.</p> <p>5 Page 3, those are Fed, AI, I</p> <p>6 can't really comment on that.</p> <p>7 Q. Sure, let's just focus on pages</p> <p>8 1 and 2.</p> <p>9 Is your position at DLJ, is</p> <p>10 that reflected on here anywhere or no?</p> <p>11 (Witness perusing document.)</p> <p>12 A. It's not, I don't know why.</p> <p>13 I mean, I told you everything I</p> <p>14 saw was accurate, but I didn't necessarily</p> <p>15 say it was comprehensive.</p> <p>16 That's missing as is my</p> <p>17 research gig out of college.</p> <p>18 Q. How many years of experience do</p> <p>19 you have as an equity analyst total,</p> <p>20 approximately?</p> <p>21 A. Let's do the math here.</p> <p>22 It is not shown DLJ, that was,</p> <p>23 to the best of my knowledge, about a</p> <p>24 year-and-a-half; 7.2, 7.1, so 9-1/2,</p> <p>25 14-1/2, 16-1/2; roughly 20 years.</p>

<p style="text-align: right;">Page 22</p> <p>1 ZAFAR</p> <p>2 Q. How many years --</p> <p>3 A. Hold on; it is actually 18</p> <p>4 years, to be exact.</p> <p>5 To the best of my knowledge, 15</p> <p>6 to 20 years, is what I would say.</p> <p>7 Q. Approximately how many years of</p> <p>8 experience do you have covering the</p> <p>9 medical device industry as an equity</p> <p>10 analyst?</p> <p>11 A. So the 2003 to 2010 stint at</p> <p>12 DB, I don't know if this is here, about a</p> <p>13 year-and-a-half of that was covering</p> <p>14 nonmedical devices in healthcare, so if I</p> <p>15 take out a year-and-a-half, you know, a</p> <p>16 year-and-a-half there, plus my first</p> <p>17 year -- so three years doing equity</p> <p>18 research non-medical device, the rest is</p> <p>19 medical devices.</p> <p>20 Does that make sense?</p> <p>21 Q. Yes, I think so; just doing the</p> <p>22 math myself, it sounds like you have</p> <p>23 somewhere between 12 and 17 --</p> <p>24 A. Exactly.</p> <p>25 Q. -- years of experience</p>	<p style="text-align: right;">Page 24</p> <p>1 ZAFAR</p> <p>2 specifically, you know, it's a dynamic</p> <p>3 space that's always innovating and you</p> <p>4 just have to stay up to speed on new</p> <p>5 clinical data, new clinical trials, new</p> <p>6 emerging companies that are pursuing these</p> <p>7 clinical trials and indications.</p> <p>8 And then looking at kind of the</p> <p>9 structural things like the macro</p> <p>10 environment and how that affects hospital</p> <p>11 spending, for example, you got to look at</p> <p>12 Medicare reimbursement trends for certain</p> <p>13 procedures.</p> <p>14 So I think that gives you a</p> <p>15 pretty good flavor of what it comprises.</p> <p>16 Q. Would you say you developed</p> <p>17 specialized knowledge in covering the</p> <p>18 medical device industry?</p> <p>19 MR. DeBAUGH: Objection to</p> <p>20 form.</p> <p>21 A. I would wholeheartedly say yes,</p> <p>22 which is what keeps me employed, this is</p> <p>23 what I get paid to do, to be an expert on</p> <p>24 this sector, so I would hope and pray that</p> <p>25 the answer to that question is yes.</p>
<p style="text-align: right;">Page 23</p> <p>1 ZAFAR</p> <p>2 covering medical device companies as an</p> <p>3 equity analyst?</p> <p>4 A. That is correct.</p> <p>5 Q. Is that experience useful to</p> <p>6 you in analyzing the medical device</p> <p>7 industry?</p> <p>8 A. Of course.</p> <p>9 Q. How so?</p> <p>10 A. Well, to advance from being an</p> <p>11 equity research associate to being an</p> <p>12 equity research analyst with coverage of</p> <p>13 stocks instead of on a supportive basis,</p> <p>14 you have to learn how to build financial</p> <p>15 models, you have to learn, quote/unquote,</p> <p>16 the science, how these devices work, how</p> <p>17 these disease states progress, you have to</p> <p>18 hone your skills on how to write a</p> <p>19 research report, which is a pretty unique</p> <p>20 format.</p> <p>21 You have to learn how to</p> <p>22 dialogue, interpersonal skills with your</p> <p>23 clients, which is a significant job, you</p> <p>24 have to learn how to value companies.</p> <p>25 But with medical devices</p>	<p style="text-align: right;">Page 25</p> <p>1 ZAFAR</p> <p>2 Q. Just focusing on the surgical</p> <p>3 devices industry, would you say that you</p> <p>4 developed specialized knowledge of that</p> <p>5 industry?</p> <p>6 MR. DeBAUGH: Objection to</p> <p>7 form.</p> <p>8 A. Yes.</p> <p>9 Q. Have you developed knowledge of</p> <p>10 the participants in that industry?</p> <p>11 A. Yes.</p> <p>12 Q. Have you developed knowledge of</p> <p>13 the products in that industry?</p> <p>14 A. Yes.</p> <p>15 Q. Have you developed knowledge of</p> <p>16 the technologies in that industry?</p> <p>17 A. Yes.</p> <p>18 Q. Have you developed knowledge of</p> <p>19 the competitive dynamics in that industry?</p> <p>20 A. Yes.</p> <p>21 Q. Have you developed knowledge of</p> <p>22 how to model financial trends in that</p> <p>23 industry?</p> <p>24 A. Yes.</p> <p>25 Q. Have you developed knowledge of</p>

<p style="text-align: right;">Page 26</p> <p>1 ZAFAR</p> <p>2 aspects of FDA regulation in that</p> <p>3 industry?</p> <p>4 A. Yes.</p> <p>5 Q. What types of methods do you</p> <p>6 use as an equity analyst in analyzing</p> <p>7 companies?</p> <p>8 A. Boy, again, going back to the</p> <p>9 whole mosaic theory concept, anything and</p> <p>10 everything that I can use as a source to</p> <p>11 become smarter than my competitors and be</p> <p>12 most value-added to my clients.</p> <p>13 That could be going to medical</p> <p>14 conferences to talk to doctors and learn</p> <p>15 about new clinical data read-outs, reading</p> <p>16 up on new technologies, just sort of</p> <p>17 academically, literally opening up a</p> <p>18 medical journal and getting smarter,</p> <p>19 honing my financial skill set.</p> <p>20 You know, reading -- listening</p> <p>21 to company public conference calls,</p> <p>22 interacting with physicians to do my</p> <p>23 primary due diligence with industry</p> <p>24 consultants that have expertise in areas</p> <p>25 relevant to my project at hand.</p>	<p style="text-align: right;">Page 28</p> <p>1 ZAFAR</p> <p>2 A. Da Vinci is a robotic platform</p> <p>3 that provides surgical assistance to a</p> <p>4 soft tissue surgeon in performing surgical</p> <p>5 procedures across specialties in a less</p> <p>6 invasive, and this is debateable, more</p> <p>7 efficacious manner, vis-a-vis outcomes,</p> <p>8 and then the obvious benefits of cosmesis</p> <p>9 and blood loss and things like that.</p> <p>10 Q. Is it a minimally invasive soft</p> <p>11 tissue robotic assisted surgery</p> <p>12 technology, in your understanding?</p> <p>13 MR. DeBAUGH: Objection to</p> <p>14 form.</p> <p>15 A. Yes.</p> <p>16 Q. And is that the product you had</p> <p>17 in mind when you said earlier that</p> <p>18 Intuitive was a monopolist?</p> <p>19 MR. DeBAUGH: Objection to the</p> <p>20 form.</p> <p>21 A. Can you repeat the question.</p> <p>22 Q. Is the Da Vinci the product you</p> <p>23 had in mind when you said earlier that</p> <p>24 Intuitive was a monopolist?</p> <p>25 A. Yes.</p>
<p style="text-align: right;">Page 27</p> <p>1 ZAFAR</p> <p>2 Those are the components that</p> <p>3 come to mind.</p> <p>4 Q. Do you interview people</p> <p>5 sometimes as part of the research you do?</p> <p>6 A. Very frequently, yes.</p> <p>7 Q. For how many years have you</p> <p>8 covered Intuitive Surgical as an equity</p> <p>9 analyst?</p> <p>10 A. So this is going to be my best</p> <p>11 estimate; so I started covering it during</p> <p>12 my first gig at Deutsche Bank, I would say</p> <p>13 best guess would be around 2006, so four</p> <p>14 years there, covered it for my guess would</p> <p>15 be four of the five years at Jefferies, so</p> <p>16 that's eight, and then I've been covering</p> <p>17 it for about two-and-a-half years, three</p> <p>18 years, at DB now.</p> <p>19 So best guess would be between</p> <p>20 ten and 12 years in aggregate.</p> <p>21 Q. Are you familiar with</p> <p>22 Intuitive's Da Vinci surgical robots?</p> <p>23 A. I am.</p> <p>24 Q. What is the Da Vinci, in your</p> <p>25 understanding?</p>	<p style="text-align: right;">Page 29</p> <p>1 ZAFAR</p> <p>2 MR. DeBAUGH: Same objection.</p> <p>3 Q. I've just handed you a document</p> <p>4 Bates stamped Restore 00085257, that's</p> <p>5 just a number in the bottom right that's</p> <p>6 used in the litigation, and I'm marking</p> <p>7 this document as Exhibit 112.</p> <p>8 (Plaintiffs' Exhibit 112, Bates</p> <p>9 stamped Restore 00085257, was marked for</p> <p>10 identification, as of this date.)</p> <p>11 Q. Do you recognize this document,</p> <p>12 Mr. Zafar?</p> <p>13 A. I do.</p> <p>14 Q. It looks like on the first page</p> <p>15 there is an e-mail at the top from Cliff</p> <p>16 Parker, it says Restore Robotics at</p> <p>17 gmail.com, he's sending an e-mail on</p> <p>18 January 27, 2020, to some other people,</p> <p>19 including Griffith and Kathryn and Vautrot</p> <p>20 and kmay at 5485 at gmail.com, the subject</p> <p>21 says "Forward: Here is our report from</p> <p>22 this morning, there is an attachment."</p> <p>23 And then below that it looks</p> <p>24 like there is an e-mail from you to Cliff</p> <p>25 Parker dated Monday, January 27, 2020.</p>

<p style="text-align: right;">Page 30</p> <p>1 ZAFAR</p> <p>2 Did you send this e-mail to</p> <p>3 Cliff Parker on January 27, 2020, at 1:36</p> <p>4 p.m.?</p> <p>5 A. I don't specifically recall</p> <p>6 having done so, but it looks like I did,</p> <p>7 yes.</p> <p>8 Q. It looks like you wrote here,</p> <p>9 "Apologies for having to run when we were</p> <p>10 chatting, nonstop client calls on this</p> <p>11 topic and the madness won't end for</p> <p>12 another couple of hours. Talk to you</p> <p>13 soon."</p> <p>14 Did you attach this document</p> <p>15 that's attached here to your e-mail?</p> <p>16 A. I did.</p> <p>17 Q. What is this document attached?</p> <p>18 A. This is a research report that</p> <p>19 my team and I published on Intuitive</p> <p>20 Surgical regarding third-party service</p> <p>21 companies that repair Da Vinci instruments</p> <p>22 for additional uses in more surgical</p> <p>23 procedures.</p> <p>24 This was a culmination of a ton</p> <p>25 of work that my team and I had done on the</p>	<p style="text-align: right;">Page 32</p> <p>1 ZAFAR</p> <p>2 that was seeking to provide third-party</p> <p>3 repair services for Da Vinci instruments?</p> <p>4 MS. SCHOENBACH: Objection to</p> <p>5 form.</p> <p>6 A. Yes.</p> <p>7 Q. You said that this report was</p> <p>8 one that your team and you put together.</p> <p>9 Who was on your team?</p> <p>10 A. So the other -- let me just</p> <p>11 clarify that.</p> <p>12 So as a team we publish, you</p> <p>13 know -- my name along with my two</p> <p>14 teammate names show up as authors of this</p> <p>15 report.</p> <p>16 Mine shows up on top for a</p> <p>17 reason, because I did the vast majority, I</p> <p>18 would say 95 percent plus, not saying that</p> <p>19 self-servingly, but I did almost the</p> <p>20 entirety of the work on this.</p> <p>21 Pito Chickering is my boss, he</p> <p>22 kind of, you know, is my mentor in a lot</p> <p>23 of ways, so certainly, you know, his input</p> <p>24 generally in these types of deep dives was</p> <p>25 a lot more directional than specific, so</p>
<p style="text-align: right;">Page 31</p> <p>1 ZAFAR</p> <p>2 space and it was an actionable culmination</p> <p>3 in terms of getting more cautious on the</p> <p>4 stock.</p> <p>5 Q. Is this a report that Deutsche</p> <p>6 Bank issued?</p> <p>7 A. Yes.</p> <p>8 Q. Were you sending this report to</p> <p>9 Mr. Parker?</p> <p>10 A. What was the question?</p> <p>11 Q. Were you sending this report to</p> <p>12 Mr. Parker?</p> <p>13 A. Again, like I said earlier,</p> <p>14 that's what it looks like, yeah.</p> <p>15 Q. Do you know Cliff Parker?</p> <p>16 A. I do.</p> <p>17 Q. Who is that?</p> <p>18 A. Cliff Parker is the -- he</p> <p>19 heads up one of these third-party</p> <p>20 instrument repair companies.</p> <p>21 Q. Which company is that?</p> <p>22 A. It may have multiple LLC names,</p> <p>23 but the one that I'm familiar with is</p> <p>24 Restore Robotics.</p> <p>25 Q. Was Restore Robotics a company</p>	<p style="text-align: right;">Page 33</p> <p>1 ZAFAR</p> <p>2 does that answer your question?</p> <p>3 Q. You covered Pito; Justin</p> <p>4 Bowers, I see that name listed here, too,</p> <p>5 what was his involvement?</p> <p>6 A. Our team collectively covers</p> <p>7 medical technology and we also cover the</p> <p>8 healthcare provider, so hospitals, surgery</p> <p>9 centers, et cetera.</p> <p>10 So those are two distinct</p> <p>11 verticals within healthcare.</p> <p>12 I do 0.0 percent of the work on</p> <p>13 the healthcare provider side; Justin does</p> <p>14 0.0 work on the medical technology side.</p> <p>15 Technically we're under the</p> <p>16 same umbrella under Pito who kind of leads</p> <p>17 both teams, therefore Justin's name shows</p> <p>18 up on the report by that association</p> <p>19 alone, he does not do any work on the</p> <p>20 medical device part.</p> <p>21 Q. Did Justin do any work in</p> <p>22 connection with this report?</p> <p>23 A. Not to my recollection.</p> <p>24 Q. Was there anybody else who</p> <p>25 helped put together this report?</p>

<p style="text-align: right;">Page 34</p> <p>1 ZAFAR</p> <p>2 A. No, not to my recollection.</p> <p>3 Q. Who wrote the report?</p> <p>4 A. I did.</p> <p>5 Q. Does this look like the final</p> <p>6 published version of the report?</p> <p>7 A. Based on -- yeah, it looks,</p> <p>8 yeah, obviously I'm not going to look</p> <p>9 through -- I have not had a chance to</p> <p>10 look through it meticulously, but it looks</p> <p>11 to be the report.</p> <p>12 Again, with the disadvantage of</p> <p>13 this being two plus years ago and</p> <p>14 literally having looked at it for 30</p> <p>15 seconds, but, yes, it looks like it on</p> <p>16 that basis.</p> <p>17 Q. So in addition to writing this</p> <p>18 report, did you do research for this</p> <p>19 report?</p> <p>20 A. God, yes.</p> <p>21 I wasn't trying to be dramatic</p> <p>22 there.</p> <p>23 Q. I am going to introduce another</p> <p>24 one here.</p> <p>25 I've just handed you a document</p>	<p style="text-align: right;">Page 36</p> <p>1 ZAFAR</p> <p>2 form.</p> <p>3 A. Yes.</p> <p>4 Q. What involvement did you have</p> <p>5 with this report, Exhibit 113, which is</p> <p>6 dated February 2020?</p> <p>7 A. Ditto to what I said about the</p> <p>8 prior report, I did almost all the work on</p> <p>9 it, you know, with some editing and</p> <p>10 guidance on proofreading and editing and</p> <p>11 things like that, but by and large this</p> <p>12 was predominantly my work.</p> <p>13 Q. By that do you mean did you</p> <p>14 write it?</p> <p>15 A. I wrote it, I had the</p> <p>16 leadership of, you know, asking the</p> <p>17 questions in our due diligence calls that</p> <p>18 we did, for example, and doing the</p> <p>19 analysis, the analyses, I don't remember</p> <p>20 if there was quantitative stuff in this</p> <p>21 one, but, yeah, this work reflects my work</p> <p>22 for the most part with minor contribution</p> <p>23 from people.</p> <p>24 Q. Does this look like the final</p> <p>25 version of this report that Deutsche Bank</p>
<p style="text-align: right;">Page 35</p> <p>1 ZAFAR</p> <p>2 with Bates No. Intuitive 566055, I skipped</p> <p>3 the first two zeros, it's marked Exhibit</p> <p>4 113.</p> <p>5 (Plaintiffs' Exhibit 113, Bates</p> <p>6 No. Intuitive 566055, was marked for</p> <p>7 identification, as of this date.)</p> <p>8 Q. Do you recognize this document?</p> <p>9 A. I do.</p> <p>10 Q. And what is this document?</p> <p>11 A. It's another research report we</p> <p>12 published on this topic of third-party</p> <p>13 repairs as a followup deeper dive on this</p> <p>14 topic -- this is a followup report</p> <p>15 published post our downgrade to reflect</p> <p>16 additional insights of what we did on the</p> <p>17 topic.</p> <p>18 Q. So was this report focused on</p> <p>19 Intuitive Surgical's business?</p> <p>20 A. Yes.</p> <p>21 Q. And was the topic of the</p> <p>22 third-party instrument repair, did that</p> <p>23 concern third-party repair of Da Vinci</p> <p>24 instruments?</p> <p>25 MR. DeBAUGH: Objection to</p>	<p style="text-align: right;">Page 37</p> <p>1 ZAFAR</p> <p>2 issued?</p> <p>3 A. I don't see any signs to say</p> <p>4 otherwise, but, again, based on my</p> <p>5 ten-second eyeballing of it, yes, it looks</p> <p>6 familiar.</p> <p>7 Q. So taking Exhibits 112 and 113</p> <p>8 together, the two reports, focusing on the</p> <p>9 reports, why did Deutsche Bank issue these</p> <p>10 reports generally?</p> <p>11 A. Because Intuitive Surgical is</p> <p>12 one of the stocks under our coverage and</p> <p>13 the competitive implications of this, of</p> <p>14 these emerging third parties, you know,</p> <p>15 was notable to me.</p> <p>16 And, you know, given the</p> <p>17 potential theoretical repercussions for</p> <p>18 Intuitive and its business model, which</p> <p>19 relies very heavily on instruments, yeah,</p> <p>20 I viewed this kind of theme, emerging</p> <p>21 theme, as being potentially impactful to</p> <p>22 Intuitive's business and stock price and</p> <p>23 that is my job, is to, you know, provide</p> <p>24 intelligence and recommendations around</p> <p>25 stock price at the end of the day.</p>

<p style="text-align: right;">Page 38</p> <p>1 ZAFAR</p> <p>2 If I had to say my job in one</p> <p>3 sentence, that's what I do, provide stock</p> <p>4 recommendations.</p> <p>5 Q. So the third parties that you</p> <p>6 mentioned in your answer just now, were</p> <p>7 those the third parties that were engaging</p> <p>8 in the Da Vinci instrument repair?</p> <p>9 MR. DeBAUGH: Objection to</p> <p>10 form.</p> <p>11 A. Correct.</p> <p>12 Q. Who were these reports intended</p> <p>13 for, generally speaking?</p> <p>14 A. Institutional investors, so</p> <p>15 portfolio managers at mutual funds, hedge</p> <p>16 funds, et cetera.</p> <p>17 Q. Around this time did Deutsche</p> <p>18 Bank issue company research reports</p> <p>19 regularly?</p> <p>20 A. I don't remember the full of</p> <p>21 reports, but, again, yes, this specific</p> <p>22 time period, yes, it's safe to assume,</p> <p>23 yes, that's what we do, we publish</p> <p>24 regularly and consistently, so, yeah, I</p> <p>25 would say yes.</p>	<p style="text-align: right;">Page 40</p> <p>1 ZAFAR</p> <p>2 MR. DeBAUGH: Same objection.</p> <p>3 A. Conclusions and opinions, are</p> <p>4 you using those interchangeably, yes.</p> <p>5 Q. Do the reports reflect your</p> <p>6 genuine beliefs at the times that they</p> <p>7 were published?</p> <p>8 A. Yes.</p> <p>9 Q. Does Deutsche Bank strive to</p> <p>10 make company research reports like these</p> <p>11 factually accurate?</p> <p>12 A. As a rule, yes.</p> <p>13 Q. And did you strive to make</p> <p>14 these reports factually accurate?</p> <p>15 A. Yes.</p> <p>16 Q. Does Deutsche Bank strive to</p> <p>17 make the predictions in reports like these</p> <p>18 accurate?</p> <p>19 A. Yes.</p> <p>20 I don't know if I can speak for</p> <p>21 my entire firm, but that's my</p> <p>22 understanding, I should say.</p> <p>23 Q. Understood.</p> <p>24 Did you strive to make the</p> <p>25 predictions in these two reports accurate?</p>
<p style="text-align: right;">Page 39</p> <p>1 ZAFAR</p> <p>2 Again, I'm saying that based on</p> <p>3 a broader view, I don't know a specific</p> <p>4 time you're asking about, but, yes,</p> <p>5 generally speaking.</p> <p>6 Q. In terms of the timeline, what</p> <p>7 I had in mind was the time frame of these</p> <p>8 reports, when they were published, so</p> <p>9 January 2020, February 2020, that time</p> <p>10 frame.</p> <p>11 A. Correct.</p> <p>12 Q. Okay.</p> <p>13 Apologies if you said this</p> <p>14 already, but did you do research for the</p> <p>15 February 20 report that's Exhibit 113?</p> <p>16 A. Did I do research for it, yes.</p> <p>17 Q. Do these reports reflect</p> <p>18 opinions that you reached as a result of</p> <p>19 your research?</p> <p>20 MR. DeBAUGH: Objection to</p> <p>21 form.</p> <p>22 A. What was the question?</p> <p>23 Q. Do these reports reflect</p> <p>24 opinions that you reached as a result of</p> <p>25 your research?</p>	<p style="text-align: right;">Page 41</p> <p>1 ZAFAR</p> <p>2 A. As I always do, yes.</p> <p>3 Q. Why is it important to try to</p> <p>4 make reports like these accurate in terms</p> <p>5 of their facts and predictions?</p> <p>6 A. Because in this business your</p> <p>7 reputation and credibility is your</p> <p>8 livelihood; if investors can't trust you,</p> <p>9 if you have, you know, compromised</p> <p>10 credibility, if you've published something</p> <p>11 that's erroneous, we all make human</p> <p>12 errors, you know, in cases, you would</p> <p>13 issue a correction, but, yes, to the best</p> <p>14 of my ability, every report that I've ever</p> <p>15 published is factually correct to the best</p> <p>16 of my ability and I make that attestation</p> <p>17 every time I submit a report to publish.</p> <p>18 Q. Just focusing on the January 27</p> <p>19 report, that's Exhibit 112, was that</p> <p>20 report created around the time that you</p> <p>21 did the research for that report?</p> <p>22 A. I would think so, but I don't</p> <p>23 remember what the chronology was, but,</p> <p>24 yes, naturally the work underlying the</p> <p>25 report would have preceded the report</p>

<p style="text-align: right;">Page 42</p> <p>1 ZAFAR</p> <p>2 itself.</p> <p>3 Q. Was the report created around</p> <p>4 the time that you reached the conclusions</p> <p>5 that went into it?</p> <p>6 A. To the best of our ability; we</p> <p>7 cover other stocks and have other</p> <p>8 responsibilities and projects going on,</p> <p>9 so, yes, we put it out as quickly as was</p> <p>10 practically possible.</p> <p>11 Q. With Exhibit 113, the February</p> <p>12 20 report, was that report created around</p> <p>13 the time that you did the research for</p> <p>14 that report?</p> <p>15 A. I don't understand the</p> <p>16 question.</p> <p>17 Q. It is a kind of odd question.</p> <p>18 Was this report issued shortly</p> <p>19 after you did the research that went into</p> <p>20 it?</p> <p>21 A. Yes.</p> <p>22 Q. And was it issued shortly after</p> <p>23 you reached the conclusions that are</p> <p>24 reflected in it?</p> <p>25 A. Yeah.</p>	<p style="text-align: right;">Page 44</p> <p>1 ZAFAR</p> <p>2 Q. Would these reports have been</p> <p>3 on that portal?</p> <p>4 A. I haven't checked for sure, but</p> <p>5 I would assume so.</p> <p>6 Q. Just focusing on the January 27</p> <p>7 report, and let me know if you would like</p> <p>8 to take a break --</p> <p>9 A. I will actually take you up on</p> <p>10 that, it is not urgent, but --</p> <p>11 Q. It's a good time to take a</p> <p>12 break.</p> <p>13 THE VIDEO TECHNICIAN: Off the</p> <p>14 record, the time on the video monitor is</p> <p>15 1:37 p.m.</p> <p>16 (Recess taken.)</p> <p>17 THE VIDEO TECHNICIAN: We are</p> <p>18 now back on the record, the time on the</p> <p>19 video monitor is 1:51 p.m.</p> <p>20 BY MR. BATEMAN:</p> <p>21 Q. Mr. Zafar, I would like to</p> <p>22 focus on the January 27 report, which is</p> <p>23 Exhibit 112.</p> <p>24 What would you describe as the</p> <p>25 main conclusion of this report?</p>
<p style="text-align: right;">Page 43</p> <p>1 ZAFAR</p> <p>2 Q. Were these reports kept in the</p> <p>3 ordinary course of Deutsche Bank's</p> <p>4 business, copies of these reports?</p> <p>5 MS. SCHOENBACH: Objection,</p> <p>6 speculation, not based on the document in</p> <p>7 front of us.</p> <p>8 Q. You can answer to the best of</p> <p>9 your ability.</p> <p>10 A. I don't even understand the</p> <p>11 question.</p> <p>12 Q. Would Deutsche Bank keep</p> <p>13 reports like these, copies of these</p> <p>14 reports that it issued, would it keep</p> <p>15 those in the ordinary course of its</p> <p>16 business?</p> <p>17 A. Do you mean like hard copies</p> <p>18 laying around, I don't know what you mean.</p> <p>19 Q. Any copies, electronic or</p> <p>20 otherwise.</p> <p>21 A. We have a research portal</p> <p>22 on-line which archives all of our research</p> <p>23 reports for access by, you know, both</p> <p>24 internally and by clients, so, yes, in</p> <p>25 that form, in that context, yes.</p>	<p style="text-align: right;">Page 45</p> <p>1 ZAFAR</p> <p>2 MR. DeBAUGH: Objection to</p> <p>3 form.</p> <p>4 A. What would I describe as the</p> <p>5 main conclusion; I think it's best</p> <p>6 summarized in the title frankly, that</p> <p>7 we've identified a potential competitive</p> <p>8 threat to Intuitive's instruments and</p> <p>9 accessories business and the appropriate</p> <p>10 action deemed -- the action deemed</p> <p>11 appropriate in response to that was to</p> <p>12 move to the sidelines on the stock, i.e.,</p> <p>13 go from buy to hold.</p> <p>14 Q. Just to clarify, was that</p> <p>15 threat that you identified the threat of</p> <p>16 third-party repair of Da Vinci</p> <p>17 instruments?</p> <p>18 MR. DeBAUGH: Objection to</p> <p>19 form.</p> <p>20 A. Yes.</p> <p>21 Q. You said that the stock was</p> <p>22 downgraded to hold in conjunction with</p> <p>23 this report.</p> <p>24 Was that Intuitive stock that</p> <p>25 Deutsche Bank downgraded?</p>

<p style="text-align: right;">Page 78</p> <p>1 ZAFAR</p> <p>2 Q. And the supply chain</p> <p>3 executives, am I right did you interview</p> <p>4 supply chain executives in connection with</p> <p>5 this report too?</p> <p>6 A. Where are you?</p> <p>7 Q. It's just mentioned in the</p> <p>8 second paragraph there on that same page.</p> <p>9 A. I don't recall specifically</p> <p>10 with respect to this report, but, yes,</p> <p>11 that would make sense.</p> <p>12 Q. Did you speak with people from</p> <p>13 hospitals in connection with this report?</p> <p>14 A. Non-physician people from</p> <p>15 hospitals?</p> <p>16 Q. Correct.</p> <p>17 A. I don't recall whether or not,</p> <p>18 to be honest, in this context.</p> <p>19 Q. Okay.</p> <p>20 If you look at page 4, there's</p> <p>21 a paragraph at the end that starts with</p> <p>22 "proof of concept," do you see that?</p> <p>23 A. Yes.</p> <p>24 Q. It says, "Favorable Experience</p> <p>25 Amongst Early Adopters: Based on the</p>	<p style="text-align: right;">Page 80</p> <p>1 ZAFAR</p> <p>2 secondhand accounts from hospitals of</p> <p>3 Intuitive's commercial team aggressively</p> <p>4 pushing back, including actions to</p> <p>5 discontinue supplying products and even</p> <p>6 taking legal action for these customers'</p> <p>7 engagement with suppliers of repaired</p> <p>8 instruments."</p> <p>9 Do you recall talking with</p> <p>10 hospitals about Intuitive's push-back on</p> <p>11 the use of third-party repaired</p> <p>12 instruments?</p> <p>13 MR. DeBAUGH: Objection.</p> <p>14 A. Again, are you talking</p> <p>15 specifically about non-surgeon hospital</p> <p>16 people, because hospital is a euphemism</p> <p>17 that could mean surgeons, it could mean</p> <p>18 CEOs, administrators, purchasing people?</p> <p>19 Q. Let's just start with</p> <p>20 non-surgeons.</p> <p>21 A. I don't recall whether or not</p> <p>22 that was part of this due diligence</p> <p>23 process, I really don't recall.</p> <p>24 Q. Was it your understanding at</p> <p>25 the time that Intuitive was indeed pushing</p>
<p style="text-align: right;">Page 79</p> <p>1 ZAFAR</p> <p>2 overall positive feedback we've gotten</p> <p>3 from early adopters, which, as noted,</p> <p>4 includes highly reputable hospitals,</p> <p>5 favorable proof of concept experience</p> <p>6 could compel more hospitals to consider</p> <p>7 engaging with third-party suppliers of</p> <p>8 repaired Da Vinci instruments," does this</p> <p>9 refresh your recollection of whether you</p> <p>10 spoke with people from hospitals other</p> <p>11 than surgeons?</p> <p>12 A. It doesn't.</p> <p>13 Q. If you go back to page 1,</p> <p>14 another issue I wanted to ask about.</p> <p>15 The last paragraph there on</p> <p>16 that page, it says, "Given the potential</p> <p>17 impact to its business, not surprisingly</p> <p>18 Intuitive is pushing back hard against</p> <p>19 third parties that have now begun engaging</p> <p>20 in Da Vinci instrument repairs," it goes</p> <p>21 on to say, "In speaking with Intuitive</p> <p>22 management, the company posits that device</p> <p>23 repairing poses a significant risk to</p> <p>24 patient safety and believes third parties</p> <p>25 are doing so unlawfully. We heard</p>	<p style="text-align: right;">Page 81</p> <p>1 ZAFAR</p> <p>2 back with its customers against</p> <p>3 third-party repair of its instruments for</p> <p>4 Da Vinci?</p> <p>5 MR. DeBAUGH: Objection.</p> <p>6 A. Yes.</p> <p>7 Q. If you go to page 3, there's a</p> <p>8 part that says, the last paragraph, second</p> <p>9 sentence in that paragraph says, "Notably</p> <p>10 Restore management indicated that its</p> <p>11 facilities are readily scalable so that</p> <p>12 output of repaired instruments can be</p> <p>13 expanded fairly quickly should customer</p> <p>14 demand increase meaningfully over the next</p> <p>15 couple of years as we anticipate," do you</p> <p>16 see that part?</p> <p>17 A. Yes.</p> <p>18 Q. Did you talk with Restore for</p> <p>19 this report?</p> <p>20 A. I talked with Restore in</p> <p>21 conjunction with this project; whether it</p> <p>22 was for this specific report or the other</p> <p>23 one -- actually, yes, yes, just a yes.</p> <p>24 Q. Do you recall Restore telling</p> <p>25 you about its ability to expand its</p>

<p style="text-align: right;">Page 82</p> <p>1 ZAFAR</p> <p>2 output?</p> <p>3 A. Not specifically.</p> <p>4 MR. DeBAUGH: Objection, sorry,</p> <p>5 objection</p> <p>6 THE WITNESS: I'm sorry.</p> <p>7 Q. Based on the fact that you</p> <p>8 included this language -- withdrawn.</p> <p>9 Based on the fact that that</p> <p>10 sentence is here in this report, do you</p> <p>11 think that you found that assumption</p> <p>12 reasonable, that Restore could scale its</p> <p>13 output and expand it fairly quickly?</p> <p>14 MR. DeBAUGH: Objection to</p> <p>15 form.</p> <p>16 A. Yes.</p> <p>17 Q. If you go to page 5, the first</p> <p>18 bullet point there, it says, "Third-party</p> <p>19 servicing of medical devices has been</p> <p>20 widespread across the industry for many</p> <p>21 years, including large segments, like</p> <p>22 endoscopes and surgical devices," do you</p> <p>23 see that?</p> <p>24 A. Yes.</p> <p>25 Q. What was that statement based</p>	<p style="text-align: right;">Page 84</p> <p>1 ZAFAR</p> <p>2 any material threat to patient safety</p> <p>3 would surely have prompted immediate FDA</p> <p>4 field action to stop their usage, which</p> <p>5 has not been the case," do you see that?</p> <p>6 A. Yes.</p> <p>7 Q. By "their usage," that's</p> <p>8 talking about the usage of third-party</p> <p>9 repaired Da Vinci instruments?</p> <p>10 A. Correct.</p> <p>11 Q. What was your basis for</p> <p>12 concluding that any material threat to</p> <p>13 patient safety would have prompted this</p> <p>14 kind of FDA action?</p> <p>15 A. Logic, because the FDA monitors</p> <p>16 these instruments, medical devices is such</p> <p>17 a highly regulated industry, especially</p> <p>18 with respect to safety.</p> <p>19 And if there was any even</p> <p>20 signal, even inaudible signal, of a safety</p> <p>21 issue with anything, FDA always errs on</p> <p>22 the side of caution, and that to me was</p> <p>23 not evident in this case, hence the</p> <p>24 statement.</p> <p>25 To me it is a statement of the</p>
<p style="text-align: right;">Page 83</p> <p>1 ZAFAR</p> <p>2 on, to the best of your recollection?</p> <p>3 A. That was based on what I know,</p> <p>4 just knowing the medical technology sector</p> <p>5 as intimately as I do, that's just a</p> <p>6 statement of fact to me, you know.</p> <p>7 Just the truth, you know, in</p> <p>8 terms of sort of more broadly, as the</p> <p>9 source indicates, you know, there was a</p> <p>10 lot of deep dive work that went into</p> <p>11 looking at FDA documentation and kind of</p> <p>12 predicate examples, such as, you know,</p> <p>13 that included endoscopes that can provide</p> <p>14 insight into --</p> <p>15 How the FDA has ruled in the</p> <p>16 past on certain things is always a good</p> <p>17 reliable indicator of how they're going to</p> <p>18 handle an emerging situation, because, you</p> <p>19 know, there's a finite explicit policy and</p> <p>20 FDA is obviously required to be consistent</p> <p>21 in its enforcement of standards.</p> <p>22 Q. If you go to the next page,</p> <p>23 page 6, bottom of that page, it says,</p> <p>24 "Bottom line regarding safety is that</p> <p>25 despite Intuitive's view on this point,</p>	<p style="text-align: right;">Page 85</p> <p>1 ZAFAR</p> <p>2 obvious, but I am a -- I realize I'm</p> <p>3 saying that as a nerd in the industry, but</p> <p>4 it's just a truism, the truth.</p> <p>5 That's just based on what I've</p> <p>6 seen in other cases, that's just a fact, a</p> <p>7 statement of fact.</p> <p>8 Q. So is this observation based on</p> <p>9 your experience as an equity analyst in</p> <p>10 the medical device industry?</p> <p>11 A. Yes.</p> <p>12 Q. If you look at pages 8 through</p> <p>13 12, it appears to summarize interviews</p> <p>14 with three surgeons and two supply chain</p> <p>15 managers.</p> <p>16 Take the time to review those,</p> <p>17 I just want to know if it refreshes your</p> <p>18 recollection as to who those individuals</p> <p>19 were or what hospitals they were at.</p> <p>20 (Witness perusing document.)</p> <p>21 A. No, I would talk to literally</p> <p>22 hundreds of hospitals and surgeons since</p> <p>23 this report was published, so I can't --</p> <p>24 I am not going to be able to identify it</p> <p>25 based on this, a specific doctor or</p>

<p style="text-align: right;">Page 86</p> <p>1 ZAFAR</p> <p>2 institution.</p> <p>3 Q. Do you think that the surgeons</p> <p>4 and the hospital employees you spoke with</p> <p>5 were based in the U.S. most likely?</p> <p>6 MR. DeBAUGH: Objection.</p> <p>7 A. Yes.</p> <p>8 Q. Why is that?</p> <p>9 A. You're asking to the best of my</p> <p>10 recollection, I thought.</p> <p>11 Q. Yeah, yeah.</p> <p>12 A. Because as we've seen in the</p> <p>13 prior charts, this analysis was focused on</p> <p>14 the U.S. market.</p> <p>15 Q. I'm ready to move on to the</p> <p>16 other report, but if you want to take a</p> <p>17 break.</p> <p>18 MS. SCHOENBACH: If we can go</p> <p>19 off the record.</p> <p>20 MR. BATEMAN: Yes.</p> <p>21 THE VIDEO TECHNICIAN: Now off</p> <p>22 the record, the time on the video monitor</p> <p>23 is 2:46 p.m.</p> <p>24 (Recess taken.)</p> <p>25 THE VIDEO TECHNICIAN: We are</p>	<p style="text-align: right;">Page 88</p> <p>1 ZAFAR</p> <p>2 respect, yeah, I would say.</p> <p>3 Q. Did you essentially reach the</p> <p>4 same conclusions in this report as you</p> <p>5 reached in the January 27 report about the</p> <p>6 predicted impact of third-party Da Vinci</p> <p>7 instrument repair on Intuitive's business?</p> <p>8 A. So the difference being that --</p> <p>9 again, I don't remember off the top of</p> <p>10 head, but it looks like -- sorry, one</p> <p>11 second here.</p> <p>12 (Witness perusing document.)</p> <p>13 A. So both reports -- I was going</p> <p>14 to say one had the quantification using</p> <p>15 that GHX stuff we talked about before.</p> <p>16 But it looks like that was also</p> <p>17 included in this report, so the</p> <p>18 conclusions were the same, that this is a</p> <p>19 real material risk to Intuitive's INA</p> <p>20 instruments and accessory business.</p> <p>21 MR. DeBAUGH: Counsel, just one</p> <p>22 moment.</p> <p>23 The court reporter, for the</p> <p>24 record, before we move on, I just want to</p> <p>25 make sure there is an objection between</p>
<p style="text-align: right;">Page 87</p> <p>1 ZAFAR</p> <p>2 now back on the record, the time on the</p> <p>3 video monitor is 2:58 p.m.</p> <p>4 BY MR. BATEMAN:</p> <p>5 Q. Mr. Zafar, I would like to now</p> <p>6 turn to the February 20 report, Exhibit</p> <p>7 113.</p> <p>8 What was the main focus of this</p> <p>9 report?</p> <p>10 A. The main focus of this report</p> <p>11 was to provide additional insights on the</p> <p>12 topic that precipitated the downgrade.</p> <p>13 So talking about additional</p> <p>14 conversations we had with surgeons, for</p> <p>15 example, essentially what additional</p> <p>16 valuable color we learned in doing our</p> <p>17 additional work post the January 27th</p> <p>18 downgrade.</p> <p>19 Q. Did Deutsche Bank do similar</p> <p>20 types of due diligence for this report as</p> <p>21 it did for the January 27, 2020, report?</p> <p>22 A. By similar, you know, the</p> <p>23 methodology is generally pretty standard;</p> <p>24 you find experts on the topic and you</p> <p>25 consult with them, so, yeah, in that</p>	<p style="text-align: right;">Page 89</p> <p>1 ZAFAR</p> <p>2 the last question and answer.</p> <p>3 Thanks very much.</p> <p>4 Q. If you will look at page 19 of</p> <p>5 this report --</p> <p>6 A. The February 20th one?</p> <p>7 Q. Yes.</p> <p>8 A. Okay.</p> <p>9 Q. The one that says "Model</p> <p>10 Ramifications, Revenue and EPS</p> <p>11 Sensitivity," do you see that?</p> <p>12 A. Yes.</p> <p>13 Q. Actually, I am going to ask you</p> <p>14 to just turn to page 15 of the other</p> <p>15 report and kind of compare the two.</p> <p>16 If you look at -- does it look</p> <p>17 like the bottom line impact that you</p> <p>18 predicted on Intuitive's business from</p> <p>19 third-party instrument repairs is the same</p> <p>20 in these two reports based on these two</p> <p>21 slides?</p> <p>22 A. It does.</p> <p>23 Q. On page 19 of the February</p> <p>24 report, you see in the third paragraph it</p> <p>25 says, "Based on our conversations with</p>

<p style="text-align: right;">Page 90</p> <p>1 ZAFAR</p> <p>2 surgeons and hospital customers, we</p> <p>3 believe 4 to 6 percent penetration of</p> <p>4 Intuitive's de novo instruments on a unit</p> <p>5 basis in 2021 is reasonable and</p> <p>6 potentially even conservative," do you see</p> <p>7 that?</p> <p>8 A. Yes.</p> <p>9 Q. Is that the same penetration</p> <p>10 rate that you adopted in the January</p> <p>11 report?</p> <p>12 A. It looks to me, yes; as a</p> <p>13 matter of fact, I think this may have been</p> <p>14 just a copy and paste job, as a matter of</p> <p>15 fact.</p> <p>16 Q. Does it look like you also</p> <p>17 adopted the same assumption that each</p> <p>18 instrument could be repaired three times</p> <p>19 on average in this report?</p> <p>20 A. Just having looked at the text</p> <p>21 again, yes, that's how it appears,</p> <p>22 correct.</p> <p>23 Q. Going back to page 1 of the</p> <p>24 February report, and I think now I really</p> <p>25 will focus on this one for a while,</p>	<p style="text-align: right;">Page 92</p> <p>1 ZAFAR</p> <p>2 Refurbished Da Vinci Instruments: Over</p> <p>3 the past few weeks we consulted with five</p> <p>4 regulatory and legal experts to gain</p> <p>5 further clarity on both the regulatory/FDA</p> <p>6 and service contract angles."</p> <p>7 Who were those five experts</p> <p>8 that you consulted with?</p> <p>9 MR. DeBAUGH: Objection.</p> <p>10 A. I don't recall off the top of</p> <p>11 my head; again, we talked to so many</p> <p>12 consultants all the time, literally</p> <p>13 hundreds since this was published, I</p> <p>14 literally don't remember.</p> <p>15 Q. And then if you can go to page</p> <p>16 8, it is a slide that says "510(k)</p> <p>17 Premarket Notification Does Not Appear</p> <p>18 Applicable" at the top.</p> <p>19 It says, "The immediate</p> <p>20 feedback to our downgrade note was that</p> <p>21 Restore Robotics is subject to 510(k)</p> <p>22 approval requirement and that because the</p> <p>23 company does not have 510(k) clearance, it</p> <p>24 is therefore in clear violation of FDA</p> <p>25 regulations."</p>
<p style="text-align: right;">Page 91</p> <p>1 ZAFAR</p> <p>2 paragraph 1, it says, "Our February 3rd</p> <p>3 downgrade was predicated on our belief</p> <p>4 that refurbished Da Vinci instruments pose</p> <p>5 a material and increasing risk to</p> <p>6 Intuitive's INA segment growth over the</p> <p>7 next couple of years. Not surprisingly,</p> <p>8 push-back has centered largely around two</p> <p>9 points," and there are two points under</p> <p>10 that.</p> <p>11 The push-back, what was the</p> <p>12 push-back that is referred to here?</p> <p>13 A. The push-back, I don't recall</p> <p>14 what that specifically refers to, because</p> <p>15 in this context -- yeah, I don't remember</p> <p>16 specifically.</p> <p>17 Q. Do you remember who pushed</p> <p>18 back?</p> <p>19 A. That's the question, I don't</p> <p>20 remember if this was in the context of</p> <p>21 investors or, you know, companies,</p> <p>22 doctors, whatever, I don't remember the</p> <p>23 context of that, to be honest.</p> <p>24 Q. If you go to paragraph 2 here,</p> <p>25 it says, "Deeper Dive Into the Threat From</p>	<p style="text-align: right;">Page 93</p> <p>1 ZAFAR</p> <p>2 Do you remember who provided</p> <p>3 that feedback that's referenced here?</p> <p>4 A. Not specifically, no.</p> <p>5 Q. If you go to page 10, the one</p> <p>6 that says "Regulatory Oversight of</p> <p>7 Facilities, ISO Certification is the</p> <p>8 Standard," at the top.</p> <p>9 If you look at the third</p> <p>10 paragraph, it says, "We were able to</p> <p>11 review a third-party ISO certification</p> <p>12 received by Restore Robotics for the</p> <p>13 servicing of EndoWrist instruments. We</p> <p>14 confirmed that the issuer of this</p> <p>15 certification, a Germany-based company</p> <p>16 called DQS MED, is reputable and credible</p> <p>17 in the Medtech industry."</p> <p>18 Do you recall how you confirmed</p> <p>19 that DQS MED was reputable and credible?</p> <p>20 A. I don't recall for certain, but</p> <p>21 my recollection is that it was on the</p> <p>22 website, these types of documentations are</p> <p>23 generally publicly-available.</p> <p>24 But I don't remember with</p> <p>25 certainty, so I will leave that as my</p>

<p style="text-align: right;">Page 210</p> <p>1 ZAFAR</p> <p>2 or publication on the website and I went</p> <p>3 through it and thought -- was trying to</p> <p>4 figure out, you know, beyond the headline,</p> <p>5 it just seemed like it could be so</p> <p>6 relevant and then indeed in looking more</p> <p>7 closely at it, there were some, you know,</p> <p>8 I thought healthcare was precluded just</p> <p>9 for regulatory safety reasons and things</p> <p>10 like that.</p> <p>11 I just thought it was something</p> <p>12 that Intuitive shareholders should be</p> <p>13 aware of given the potential relevance to</p> <p>14 their business, specifically the right to</p> <p>15 get Da Vinci instruments, EndoWrist</p> <p>16 instruments, repaired by a third party,</p> <p>17 this whole concept of right to repair.</p> <p>18 And sort of the exposition on</p> <p>19 that topic was deliberately more just the</p> <p>20 facts because I was still digesting it; in</p> <p>21 this business, when you see a news item,</p> <p>22 the key is trying to figure out what it</p> <p>23 means for a company or a stock, but</p> <p>24 initially just giving investors the</p> <p>25 heads-up, okay, this is out there, you</p>	<p style="text-align: right;">Page 212</p> <p>1 ZAFAR</p> <p>2 MR. BATEMAN: I really have a</p> <p>3 problem asking questions about this</p> <p>4 document which you have not produced, it</p> <p>5 doesn't matter if it is a public document,</p> <p>6 you're obligated to produce it, it is</p> <p>7 clearly responsive to our document</p> <p>8 request, we have had document requests</p> <p>9 about this exact thing, so I take issue</p> <p>10 with asking questions about this document.</p> <p>11 MR. DeBAUGH: Can we go off the</p> <p>12 record momentarily, please.</p> <p>13 THE VIDEO TECHNICIAN: Off the</p> <p>14 record, the time on the video monitor is</p> <p>15 5:45 p.m.</p> <p>16 (Recess taken.)</p> <p>17 THE VIDEO TECHNICIAN: We are</p> <p>18 now back on the record, time on the video</p> <p>19 monitor is 5:54 p.m.</p> <p>20 MR. DeBAUGH: When we went off</p> <p>21 the record, counsel for hospital</p> <p>22 plaintiffs, Mr. Bateman, had objected to</p> <p>23 the use of Zafar Exhibit No. 5 on the</p> <p>24 basis that it had not been produced in</p> <p>25 this litigation.</p>
<p style="text-align: right;">Page 211</p> <p>1 ZAFAR</p> <p>2 know, worth its weight in gold.</p> <p>3 So I think this looks like it</p> <p>4 was kind of at the stage where that news</p> <p>5 item was vis-a-vis FTC, so I kind of just</p> <p>6 summarized kind of what's going on there.</p> <p>7 Q. I just have maybe one or two</p> <p>8 questions about this document.</p> <p>9 Is this a report that you</p> <p>10 served as the lead analyst for?</p> <p>11 A. Yes.</p> <p>12 Q. The third paragraph says, "What</p> <p>13 to Watch For," do you see that?</p> <p>14 A. Yes.</p> <p>15 Q. The second sentence says, "As</p> <p>16 we previously noted, a number of hospitals</p> <p>17 we've spoken with over the past couple of</p> <p>18 years are increasingly considering pursuit</p> <p>19 of legal action against Intuitive</p> <p>20 regarding service and instrument supply</p> <p>21 contracts," do you see that?</p> <p>22 A. Yes.</p> <p>23 Q. Who were the hospitals that you</p> <p>24 and your team have spoken with regarding</p> <p>25 service and instrument supply contracts?</p>	<p style="text-align: right;">Page 213</p> <p>1 ZAFAR</p> <p>2 I explained to Mr. Bateman that</p> <p>3 this was a publicly-available document.</p> <p>4 On the basis of Mr. Bateman's</p> <p>5 objection, I will ask the witness to set</p> <p>6 aside Zafar Exhibit No. 5, I will be happy</p> <p>7 to colloquy with counsel off the record on</p> <p>8 rectifying any type of production concern,</p> <p>9 whether or not that has occurred in this</p> <p>10 case, I am not conceding to that actually</p> <p>11 happening here, but I'm happy to set aside</p> <p>12 the exhibit and continue forward with the</p> <p>13 deposition.</p> <p>14 Mr. Bateman, anything you want</p> <p>15 to add for the record?</p> <p>16 MR. BATEMAN: Sure, just having</p> <p>17 had a chance to review the document, I do</p> <p>18 think it's responsive to our document</p> <p>19 requests and that it is a known responsive</p> <p>20 document in the possession, custody or</p> <p>21 control of Intuitive lawyers, it should</p> <p>22 have been produced, especially if it is</p> <p>23 going to be used at the deposition, so</p> <p>24 just wanted to state that, but thanks for</p> <p>25 agreeing to move on.</p>

<p style="text-align: right;">Page 214</p> <p>1 ZAFAR</p> <p>2 MR. DeBAUGH: Sure, objection</p> <p>3 taken under advisement and we can talk</p> <p>4 about this post deposition.</p> <p>5 BY MR. DeBAUGH:</p> <p>6 Q. Mr. Zafar, at the beginning of</p> <p>7 my questioning this afternoon, I had asked</p> <p>8 you about the named hospital plaintiffs in</p> <p>9 the pending class action.</p> <p>10 Do you remember that?</p> <p>11 A. I do.</p> <p>12 Q. There were four hospital</p> <p>13 systems or healthcare systems that I asked</p> <p>14 you about and you had said that you had</p> <p>15 not had a conversation, to your knowledge,</p> <p>16 with anyone affiliated with those four</p> <p>17 hospitals, do you recall that?</p> <p>18 A. I do.</p> <p>19 Q. Have you had a conversation</p> <p>20 about the pending litigation, the</p> <p>21 potential class action, against Intuitive</p> <p>22 Surgical with any other hospital systems?</p> <p>23 A. Not to my recollection.</p> <p>24 MR. DeBAUGH: I do not have any</p> <p>25 further questions at this time.</p>	<p style="text-align: right;">Page 216</p> <p>1 ZAFAR</p> <p>2 Q. Do you view that as a distinct</p> <p>3 market?</p> <p>4 MR. DeBAUGH: Objection.</p> <p>5 A. For the most part; there's a</p> <p>6 little bit of gray area when you're</p> <p>7 talking about what I think about more as</p> <p>8 like, you know, enhanced, premium lap</p> <p>9 traditional -- more or less, around the</p> <p>10 edges there is a little bit of a gray area</p> <p>11 because there are companies, for example,</p> <p>12 a company called Transenterix, which may</p> <p>13 have changed its name since then, but</p> <p>14 that's what I know it as, they have</p> <p>15 developed a platform that is ostensibly a</p> <p>16 robot, but it's really just a fancy</p> <p>17 laparoscope without really the benefits of</p> <p>18 robotic assistance.</p> <p>19 So long-winded answer, for the</p> <p>20 most part, yes, I see it as distinct, but</p> <p>21 with some gray area, some consider those</p> <p>22 types of companies to be robotics as well.</p> <p>23 Q. In addition to Transenterix,</p> <p>24 can you think of any other exceptions to</p> <p>25 this distinct robotic market?</p>
<p style="text-align: right;">Page 215</p> <p>1 ZAFAR</p> <p>2 MR. BATEMAN: I have a few, not</p> <p>3 many.</p> <p>4 THE VIDEO TECHNICIAN: Off the</p> <p>5 record, time on the video monitor is 5:57</p> <p>6 p.m.</p> <p>7 (Pause.)</p> <p>8 THE VIDEO TECHNICIAN: We are</p> <p>9 now back on the record, the time on the</p> <p>10 video monitor is 5:59 p.m.</p> <p>11 BY MR. BATEMAN:</p> <p>12 Q. Just a few followup questions</p> <p>13 on the questions that Mr. DeBaugh asked</p> <p>14 you.</p> <p>15 So I believe you testified</p> <p>16 earlier that Intuitive competes against</p> <p>17 laparoscopic surgery and open surgery, do</p> <p>18 you recall that testimony?</p> <p>19 A. I do.</p> <p>20 Q. When you testified earlier that</p> <p>21 Intuitive is a monopolist, what product</p> <p>22 market is Intuitive a monopolist in, in</p> <p>23 your view?</p> <p>24 MR. DeBAUGH: Objection.</p> <p>25 A. Robotic surgery specifically.</p>	<p style="text-align: right;">Page 217</p> <p>1 ZAFAR</p> <p>2 A. I mean, again, Medtronic now</p> <p>3 has, you know, a viable ready-for-human</p> <p>4 clinical trial robot that should be</p> <p>5 entering clinical trials any day now</p> <p>6 presumably.</p> <p>7 They do have approval</p> <p>8 internationally, so they do have a very,</p> <p>9 very minute presence overseas now, within</p> <p>10 the last year or so.</p> <p>11 There's some competitors in</p> <p>12 Japan and China; frankly, those markets</p> <p>13 are much harder to monitor.</p> <p>14 So that's kind of the way I</p> <p>15 look at the robotic surgery universe.</p> <p>16 Q. Why do you view robotic surgery</p> <p>17 as a distinct market?</p> <p>18 A. Technology, having the robotic</p> <p>19 assistance in multitude of ways, whether</p> <p>20 it's the robotic arms, like the actual</p> <p>21 robotic, you know, definitionally, plus</p> <p>22 the instruments that go along with it that</p> <p>23 enable imaging and stapling and things</p> <p>24 like that.</p> <p>25 Q. In your experience, is there a</p>

<p style="text-align: right;">Page 218</p> <p>1 ZAFAR</p> <p>2 distinct demand for minimally invasive</p> <p>3 surgical robots like the Da Vinci compared</p> <p>4 to laparoscopic instruments and open</p> <p>5 surgical instruments?</p> <p>6 A. Yes --</p> <p>7 MR. DeBAUGH: Objection.</p> <p>8 A. Yes.</p> <p>9 Q. I also just want to revisit a</p> <p>10 question that was asked about whether you</p> <p>11 have engineering training, I believe you</p> <p>12 said no earlier?</p> <p>13 A. That's correct.</p> <p>14 Q. Do you think you need</p> <p>15 engineering training to do a good job</p> <p>16 analyzing the medical device industry as</p> <p>17 an equity analyst?</p> <p>18 A. No.</p> <p>19 Q. Why not?</p> <p>20 A. I based my answer on, and I say</p> <p>21 this with humility, with what I believe</p> <p>22 has been a successful career in medical</p> <p>23 device equity research without having that</p> <p>24 type of a technical degree, so based on</p> <p>25 experience more than anything else, plus</p>	<p style="text-align: right;">Page 220</p> <p>1 ZAFAR</p> <p>2 Zafar 1.</p> <p>3 After quickly speaking with my</p> <p>4 colleagues, I understand the Bates number</p> <p>5 to be what I reported it as, and if we</p> <p>6 need to follow up and clarify the record</p> <p>7 outside the scope of this deposition, we</p> <p>8 will.</p> <p>9 MR. BATEMAN: Okay.</p> <p>10 THE VIDEO TECHNICIAN: Now off</p> <p>11 the record, the time on the video monitor</p> <p>12 is 6:05 p.m.</p> <p>13 (Recess taken.)</p> <p>14 THE VIDEO TECHNICIAN: We are</p> <p>15 now back on the record, the time on the</p> <p>16 video monitor is 6:25 p.m.</p> <p>17 EXAMINATION BY</p> <p>18 MS. SCHOENBACH:</p> <p>19 Q. I am just going to ask you a</p> <p>20 few questions about your testimony today</p> <p>21 to clarify a few points for the record, if</p> <p>22 you don't mind.</p> <p>23 A. Sure.</p> <p>24 Q. First, could you please</p> <p>25 identify the specific Deutsche Bank entity</p>
<p style="text-align: right;">Page 219</p> <p>1 ZAFAR</p> <p>2 looking at peers in the same situation who</p> <p>3 have been very successful without that</p> <p>4 type of qualification.</p> <p>5 Q. Are you able to rely to some</p> <p>6 extent on the expertise of people you talk</p> <p>7 to and also rely on literature for</p> <p>8 engineering information in the course of</p> <p>9 your job?</p> <p>10 A. Absolutely, yes, essential.</p> <p>11 Q. Did you ever lead Deutsche Bank</p> <p>12 to believe that you had engineering</p> <p>13 training?</p> <p>14 A. No.</p> <p>15 Q. And they still hired you to be</p> <p>16 an equity analyst for the medical device</p> <p>17 industry, right?</p> <p>18 A. That's a true statement.</p> <p>19 MR. BATEMAN: I have no further</p> <p>20 questions.</p> <p>21 MS. SCHOENBACH: If we can go</p> <p>22 off the record for a few minutes.</p> <p>23 MR. DeBAUGH: Before we go off</p> <p>24 the record, I just want to circle back to</p> <p>25 a promised return to the Bates number of</p>	<p style="text-align: right;">Page 221</p> <p>1 ZAFAR</p> <p>2 with which you're employed?</p> <p>3 A. Deutsche Bank Securities</p> <p>4 Incorporated.</p> <p>5 Q. DBSI for short?</p> <p>6 A. Yes.</p> <p>7 Q. Is it in that context that you</p> <p>8 were hired as a research analyst?</p> <p>9 A. Yes.</p> <p>10 Q. Within that context, as a DBSI</p> <p>11 employee, it is within that context that</p> <p>12 these reports that we discussed today,</p> <p>13 particularly those that are Exhibits 112</p> <p>14 and 113, were prepared?</p> <p>15 A. Correct.</p> <p>16 Q. I would like to discuss with</p> <p>17 you some of the questions that Mr. Bateman</p> <p>18 asked earlier today, counsel for</p> <p>19 plaintiffs.</p> <p>20 Do you remember discussing with</p> <p>21 Mr. Bateman the content of your reports,</p> <p>22 and particularly whether you and your team</p> <p>23 endeavored to have the analysis and</p> <p>24 predictions therein be accurate?</p> <p>25 A. Without exception, yes.</p>

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10 **NORTHERN DISTRICT OF CALIFORNIA**
11 **SAN FRANCISCO DIVISION**

12 **SURGICAL INSTRUMENT SERVICE**
13 **COMPANY, INC.**

14 *Plaintiff/Counter-*
15 *Defendant,*

16 v.

17 **INTUITIVE SURGICAL, INC.**

18 *Defendant/Counterclaimant.*

CASE NO. 3:21-CV-03496-AMO

Honorable Araceli Martínez-Olguín

PLAINTIFF SIS's OPPOSITION TO
INTUITIVE'S MOTION IN LIMINE
#2

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In its Motion In Limine No. 2 (“Mtn No. 2”), Intuitive Surgical, Inc. (“Intuitive”) launches a multipronged assault against Surgical Instrument Service Company, Inc.’s (“SIS”) antitrust and damages experts’ reliance on two Deutsche Bank analyst reports, as well as against the independent introduction into evidence or referencing during trial of these reports.

**SIS EXPERTS’ RELIANCE ON PARTICULAR PASSAGES
FROM THE DEUTSCHE BANK ANALYST REPORTS**

Dr. Russell Lamb is a Ph.D. economist and provides expert opinions and testimony regarding antitrust issues in this case. Mr. Richard Bero is a CPA and provides expert opinions and testimony regarding damages issues. Attached as Van Hoven Exs. 1 - 2 are excerpted Lamb and Bero reports including any references to the Deutsche analyst reports, which were produced from Intuitive’s files and are attached as Brachman Exs. 1-2 to Intuitive’s Motion.

ARGUMENT

1. SIS’s Experts May Base Opinions On The Deutsche Bank Analyst Reports Pursuant to Federal Rule of Evidence 703

Intuitive first argues that the Deutsche Bank analyst reports “consist entirely of statements made outside of court that are being offered to prove the truth of the matters asserted, and thus are textbook examples of inadmissible hearsay under Federal Rule of Evidence 801/802.” Mtn No. 2 at p. 2. Intuitive appears to regard this argument as putting an end to the inquiry, citing *In re Sybase, Inc. Sec. Litig.*, 48 F. Supp. 2d 958, 960 (N.D. Cal. 1999). But Intuitive’s reliance on *In re Sybase* does not justify its oversimplified conclusion. *See United States v. McCollum*, 732 F.2d 1419, 1422–23 (9th Cir.1984) (applying Rule 703 to affirm the admission of expert testimony based on hearsay). The *In re Sybase* court did not address admissibility of analyst reports under Federal Rule of Evidence (“FRE”) 703 or an expert’s reliance on inadmissible evidence pursuant to Rule 703.

Setting aside for the moment the question of whether the Deutsche Bank analyst reports are being offered to prove the truth of the matters asserted, FRE 703 allows experts to rely on otherwise inadmissible evidence in formulating their opinions “[i]f experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion on the subject.” *Jensen v. EXC, Inc.*, 82 F.4th 835, 847 (9th Cir. 2023). “[E]xperts are entitled to rely on hearsay in forming their opinions.” *Carson Harbor Vill., Ltd. v. Unocal Corp.*, 270 F.3d

1 863, 873 (9th Cir. 2001) (en banc). Additionally, under Rule 703, the proponent of the opinion
2 may disclose otherwise-inadmissible “facts or data” to the jury if “their probative value in
3 helping the jury evaluate the opinion substantially outweighs their prejudicial effect.” *Id.*; see
4 also *Banerji v. Leggett & Platt, Inc.*, No. 15-1653, 2016 WL 11759104, at *1 (C.D. Cal. Dec.
5 21, 2016); *Chesapeake Louisiana, L.P. v. Innovative Wellsite Sys., Inc.*, No. 12–2963, 2014
6 WL 4388256, *2 (W.D. La. Sept. 5, 2014) (otherwise-inadmissible information may be used
7 by experts at trial where probative value in helping jury evaluate expert opinions substantially
8 outweighs the prejudicial effect); *U.S. v. Boyle*, No. 08 CR 523, 2010 WL 286624, at *2
9 (S.D.N.Y. Jan. 15, 2010) (expert’s opinion admissible where he “[a]pplies his expertise to out-
10 of-court statements and other sources, and synthesizes or analyzes that information, along with
11 other information, in the form of an expert opinion”).

12 Dr. Lamb’s and Mr. Bero’s references to the Deutsche Bank analyst reports are a
13 legitimate use of that evidence as a basis for their respective, independent expert opinions
14 pursuant to Rule 703. See Exh. 1 & 2. And Intuitive filed Daubert motions challenging both
15 Dr. Lamb’s and Mr. Bero’s expert testimony, both of which were denied in their entirety (Dkt.
16 126, Dkt. 129, Dkt. 203). In neither motion, did Intuitive raise any issue with respect to the
17 Deutsche Bank reports or Dr. Lamb’s and Mr. Bero’s reliance on them. Nevertheless, in what
18 appears to be a veiled collateral attack on the Court’s Daubert rulings, Intuitive claims Dr.
19 Lamb’s and Mr. Bero’s use of the Deutsche Bank reports “is a blatant attempt to introduce
20 hearsay to the jury “under the guise that the testifying expert used the hearsay as the basis of
21 his testimony.” Mtn No. 2 at p. 7 (citing *Malletier v. Dooney & Bourke, Inc.*, 525 F. Supp. 2d
22 558, 666 (S.D.N.Y. 2007)). Intuitive is way off base. An expert can “rely on the opinions of
23 others if other evidence supports his opinion and the record demonstrates that the expert
24 conducted an independent evaluation of that evidence.” *In re ConAgra Foods, Inc.*, 302 F.R.D.
25 537, 556 (C.D. Cal. 2014).

26 Intuitive’s reliance on the *Malletier* case is also misplaced. In that case, the testifying
27 expert based his critical conclusion on a statistical regression analysis that he did not conduct
28 himself. The court noted that the testifying expert “was not presented as and was demonstrably

1 unqualified to be an expert on statistical analysis.” *Malletier*, 525 F. Supp. 2d at 664. “Because
 2 [the testifying expert] is not qualified to conduct or interpret statistical analyses, the regression
 3 analysis could only be admissible if [the testifying expert] is permitted to give an opinion by
 4 relying completely on [the non-testifying expert’s] opinion.” *Id.* On the facts of *Malletier*, the
 5 court held that “testimony from [the testifying expert] about the regression analysis must be
 6 excluded under Rule 702 because it is nothing but conduit testimony from an expert on a matter
 7 outside his field of expertise”. *Id.* at 666. But, the court acknowledged that the testifying expert
 8 could rely on the non-testifying expert’s opinion if the testifying expert was also giving his
 9 own opinion and not simply a conduit for the opinion of an unproduced expert. *Id.* at 664.

10 Dr. Lamb’s and Mr. Bero’s expert testimonies in reliance on the Deutsche Bank reports
 11 bear no resemblance to the situation in *Malletier*. Perhaps recognizing its charge that SIS is
 12 using “Rule 703 as a backdoor to disclose otherwise inadmissible hearsay opinions” lacks any
 13 persuasive support, Intuitive alternatively invites this Court to grant this motion merely on the
 14 basis of the ruling in *Rebotix Repair, LLC v. Intuitive Surgical, Inc.*, 2022 WL 3226794, at *5
 15 (M.D. Fla. Aug. 10, 2022). Mtn. No. 2 at pp. 1, 7. Again, Intuitive’s reliance on the decision
 16 in *Rebotix* is misplaced and to no avail in this situation. The issue in *Rebotix* was an FDA
 17 expert’s reliance on one of the Deutsche Bank reports for statements related to regulatory
 18 issues. *Rebotix* at *5. The *Rebotix* court stated that “[a]n expert may not present testimony that
 19 merely ‘parrots’ the opinions of others, without providing an independent evaluation of the
 20 evidence.” *Rebotix*, at *4 (citation omitted). Inappropriate parroting occurs when an expert
 21 “simply repeat[s] or adopt[s] the findings of another expert without attempting to assess the
 22 validity of the opinions relied upon”. *Id.* (citations omitted). The *Rebotix* court found that:

23 There is no evidence in the record that analyst reports like the one prepared by
 24 Deutsche Bank are relied upon by FDA experts. Stevens even testified that he could
 25 not recall whether he had ever relied upon an analyst report to help form his opinion
 on an FDA issue. *Rebotix* has not shown how the Deutsche Bank report is “of a
 type reasonably relied upon by experts in the field” in forming their opinions.

26 *Rebotix*, at *5. There are no parallels between the situation presented in *Rebotix* and the use of
 27 the Deutsche Bank reports by Dr. Lamb and Mr. Bero in this case. Additionally, Intuitive does
 28 not assert that the Deutsche Bank reports are not of a type reasonably relied upon by experts

1 in the fields of economics (Dr. Lamb's field) or damages accounting (Mr. Bero's field).
 2 Accordingly, SIS's experts may testify that they used the Deutsche Bank analyst reports in
 3 formulating their expert opinions without running afoul of FRE 702 or 703.

4 2. The Deutsche Bank Analyst Reports Are Not Excluded By The
 Rule Against Hearsay Pursuant to the Exception in Rule 803(17)

5 The Deutsche Bank analyst reports fall under the exception for "Market Reports and
 6 similar Commercial Publications" (FRE 803(17)). The two factors for admissibility under this
 7 exception are necessity and reliability. *United States v. Woods*, 321 U.S. F.3d 361, 364 (3d
 8 Cir. 2003). Necessity means that, as a practical matter, it would be impossible to present all
 9 the witnesses and information in court that went into the report. *Id.* As indicated by the
 10 Advisory Committee Note, reliability means that the compilers of the information (here, the
 11 Deutsche Bank analyst) have a motive to be accurate. *Id.* Crucial inquiries under this exception
 12 are the matters of trustworthiness and the motivation of the author to ensure accuracy. "The
 13 basis of trustworthiness is general reliance by the public or by a particular segment of it, and
 14 the motivation of the compiler to foster reliance by being accurate." *Avondale Mills, Inc. v.*
 15 *Norfolk Southern Corp.*, No. 1:05-2817, 2008 WL 6953956, *4 (D. SC February 21, 2008)
 16 (Motion in limine to exclude Moody, Standard & Poor, and Imperial Capital Financial Reports
 17 denied). "In this case, the authors of the reports 'know that their work will be consulted; if it
 18 is inaccurate, the public or the trade will cease consulting their product.' " *Id.*; *see also Bianco*
 19 *v. Globus Med., Inc.*, No. 2:12-CV-00147, 2014 WL 119285, at *1 (E.D. Tex. Jan. 12, 2014).
 20 The same is true in the case of the Deutsche Bank analyst reports. Intuitive does not appear to
 21 dispute that these reports are generally relied upon by the business and financial communities.
 22 These reports were generated by one of the world's leading providers of global business
 23 information and offered through a subscriber service aimed at the business and financial
 24 communities. Indeed, senior Intuitive employees relied on these reports. *See infra* (discussing
 25 Van Hoven Exs. 3-5). Further, Intuitive does not appear to allege that the analyst who prepared
 26 the Deutsche Bank reports was not trying to be fully accurate to foster reliance by its
 27 subscribers and professional readers. Deutsche Bank surely knows that its analyst reports will
 28 be consulted as they were by Intuitive, and inaccuracies will reduce demand for those reports.

1 Clearly, the Deutsche Bank reports are the sort of record contemplated by Rule 803(17).

2 Intuitive also argues that the Deutsche Bank “consist of subjective opinions and
3 conclusions” that are purportedly inadmissible under Rule 803(17). Mtn No. 2 at p. 2.
4 Intuitive’s “bright line” standard is not the law. Courts have admitted purportedly subjective
5 and evaluative materials under the “market reports” exception in circumstances where there
6 are independent indicia of trustworthiness. *See, e.g., Hamilton v. Accu-Tek*, 32 F.Supp.2d 47,
7 64 n. 11 (E.D.N.Y.1998) (admitting Dun & Bradstreet reports on grounds that those reports
8 were prepared for use in financial industries rather than in anticipation of litigation); *Kuper v.*
9 *Quantum Chemicals Corp.*, 852 F.Supp. 1389, 1398 n. 4 (S.D.Ohio 1994) (admitting third
10 party reports encouraging purchase of stock); *see also Weinstein’s Federal Evidence* §
11 803.22[3] (4th ed. 1994) (“Whether each [publication] meets the requisite standard for
12 trustworthiness entitling it to hearsay exemption must be determined on a case by case basis.”).

13 3. The Deutsche Bank Reports Are Admissible As Business Records
14 Under the Hearsay Exception of Rule 803(6)

15 A document prepared by a third party may qualify as another business entity’s business
16 record under Rule 803(6) if that entity integrated the third-party record into its records and
17 relied upon it in its day-to-day operations. The proponent also must satisfy the other
18 requirements of Rule 803(6). *See, e.g., Brawner v. Allstate Indem. Co.*, 591 F.3d 984, 987 (8th
19 Cir.2010) (“Several other courts have held that a record created by a third party and integrated
20 into another entity’s records is admissible as the record of the custodian entity, so long as the
21 custodian entity relied upon the accuracy of the record and the other requirements of Rule
22 803(6) are satisfied.... We agree with these courts....”); *United States v. Adefehinti*, 510 F.3d
23 319, 326 (D.C.Cir.2007) (“[A] record of which a firm takes custody is thereby ‘made’ by the
24 firm within the meaning of the rule (and thus is admissible if all the other requirements are
25 satisfied.)”); *Air Land Forwarders, Inc. v. United States*, 172 F.3d 1338, 1342–44
26 (Fed.Cir.1999) (“Other courts of appeal have addressed this situation in a number of cases and
27 have generally held that a document prepared by a third party is properly admitted as part of
28 the business entity’s records if the business integrated the document into its records and relied
upon it.”); *United States v. Duncan*, 919 F.2d 981, 986 (5th Cir.1990) (holding that medical

1 records from hospital were the business records of the insurance company and explicitly
 2 recognizing that “there is no requirement that the [business] records be created by the business
 3 having custody of them”); *see also Columbia First Bank, F.S.B. v. United States*, 58 Fed.Cl.
 4 333, 339 (Fed.Cl.2003) (third-party documents can be admitted as business records if they
 5 meet the other Rule 803(6) requirements and are “shown to have been received and
 6 incorporated, to have been relied upon, and to have indicia of trustworthiness”).

7 The record shows that Intuitive subscribed to and kept the Deutsche Bank reports and
 8 relied on them in the regular course of business. Van Hoven Exs. 3-4; *see also* Van Hoven
 9 Ex. 5 (DeSantis Deposition) at 80:14-83:3. Intuitive kept the Deutsche Bank analyst reports
 10 in the course of regularly conducted business activity, and it was the regular practice of
 11 Intuitive to make such records. *See United States v. Given*, 164 F.3d 389, 394 (7th Cir.1999).
 12 Accordingly, the Deutsche Bank analyst reports can be admitted as business records under
 13 Rule 803(6). *See JIPC Mgmt., Inc. v. Incredible Pizza Co.*, No. CV 08-04310, 2009 WL
 14 8591607, at *21-22 (C.D. Cal. July 14, 2009).

15 4. The Deutsche Bank Reports Are Admissible Under The State of
 16 Mind Hearsay Exception of Rule 803(3)

17 The decision in *Consol. Credit Agency v. Equifax, Inc.* explains that the state of mind
 18 exception to the hearsay rule requires that: (1) the statement was made contemporaneously
 19 with the mental state to be proven; (2) circumstances do not suggest a motive for the declarant
 20 to fabricate or misrepresent his or her thoughts; and (3) the declarant’s state of mind is relevant
 21 to an issue in the case. No. CV-03-1229, 2005 WL 6218038, at *2 (C.D. Cal. Jan. 26, 2005).

22 Nick Alter, an Intuitive Senior Analyst in Finance & Sales Operations, subscribed to the
 23 Deutsche Bank analytical research reports and circulated copies via email to other Intuitive
 24 executives such as Philip Kim, commenting that they provided a “Deeper Dive on Third Party
 25 I&A [Instrument and Accessories] Risk”. Van Hoven Ex. 4; Ex. 5 at 80:14-83:3. In another
 26 instance, Mr. Kim forwarded the report to scores of recipients with commentary that “academic
 27 centers and even large hospital systems [may] soon begin using repaired da Vinci instruments
 28 supplied by third-parties.” *Id.* a Ex. 3. SIS intends to proffer these Intuitive emails dealing
 with the Deutsche Bank reports as proving the mental state of Intuitive’s marketing executives

1 through their contemporaneous statements and will not be offering them to prove the truth of
 2 the underlying facts asserted. None of the circumstances surrounding the Deutsche Bank-
 3 related emails suggest a motive for the Intuitive executives to fabricate or misrepresent his or
 4 her thoughts and the state of mind of Intuitive’s marketing executives regarding the
 5 competitive threat represented by third-party repair of EndoWrist instruments is relevant to the
 6 issues in this case. *See Berkley Insurance Co. v. Federal Housing Finance Agency*, No. 1:13-
 7 cv-1053, 2023 WL 4744155, at *3 (D. DC July 25, 2023) (“[T]here there is a clear chain of
 8 inferences the jury could draw: that the reports’ presence in email chains and meeting notes
 9 related to the Third Amendment implies that [individuals] saw and read them, and that after
 10 doing so, they considered the reports in the decision making process.”).

11 5. The Deutsche Bank Reports Are Admissible Because They Are Not Hearsay

12 “Out-of-court statements constitute hearsay only when offered in evidence to prove the
 13 truth of the matter asserted.” *Anderson v. United States*, 417 U.S. 211, 219 (1974). A statement
 14 that would otherwise be hearsay may nevertheless be admissible if it is offered to prove
 15 something other than its truth, and this includes statements used to charge a party with
 16 knowledge of certain information. *Gardner v. Q.H.S., Inc.*, 448 F.2d 238, 244 (4th Cir.1971)
 17 (finding out-of-court statements admissible “to show defendants’ knowledge of the harm their
 18 product could inflict, provided only that [the statements] were brought to the attention of the
 19 defendants”); *see United States v. Macias-Farias*, 706 F.3d 775, 781 (6th Cir.2013).
 20 “[W]hether an out-of-court assertion is hearsay depends on its use “ at trial. David F. Binder,
 21 Hearsay Handbook § 1:9 (4th ed.2015).

22 SIS seeks to introduce the Deutsche Bank reports to show that Intuitive was aware of the
 23 issues raised by the competitive threat posed by third-party activities refurbishing EndoWrist
 24 instruments discussed in the reports. *See Van Hoven Exs. 3-5*. The Deutsche Bank reports are
 25 properly offered and admissible to show where Intuitive focused its responses to the various
 26 aspects of the third-party threat in the repair and replacement EndoWrist aftermarket.

27 CONCLUSION

28 For the above reasons, SIS respectfully requests that the Court deny Intuitive’s MIL #2.

1 Dated: November 7, 2024

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9 **UNITED STATES DISTRICT COURT**
10 **NORTHERN DISTRICT OF CALIFORNIA**
11 **SAN FRANCISCO DIVISION**

12 **SURGICAL INSTRUMENT SERVICE**
13 **COMPANY, INC.**

14 *Plaintiff/Counter-Defendant,*

15 v.

16 **INTUITIVE SURGICAL, INC.**

17 *Defendant/Counterclaimant.*

CASE NO. 3:21-CV-03496-AMO

Honorable Araceli Martínez-Olguín

**DECLARATION OF JOSHUA VAN
HOVEN IN SUPPORT OF
PLAINTIFF SIS's OPPOSITION TO
INTUITIVE'S MOTION IN LIMINE
#2**

1 I, JOSHUA VAN HOVEN, declare as follows:

2 I am an attorney at the law firm of MCCAULLEY LAW GROUP LLC, attorneys for
3 Plaintiff SURGICAL INSTRUMENT SERVICE COMPANY, INC. (“SIS”) in this matter. I
4 have personal knowledge of the matters set forth herein, unless otherwise noted.

- 5 1. Attached as Exhibit 1 is a true and correct copy of excerpts of the Expert Report
6 of Russell L. Lamb, PhD., an SIS expert in this case, which is dated December 2,
7 2022.
 - 8 2. Attached as Exhibit 2 is a true and correct copy of excerpts of the Expert Report
9 of Richard F. Bero, CPA, CVA, an SIS expert in this case, which is dated
10 December 2, 2022.
 - 11 3. Attached as Exhibit 3 is a true and correct copy of e-mail correspondence from
12 Philip Kim, Investor Relations at Intuitive, to Intuitive employees, which is dated
13 January 31, 2020, which was produced by Intuitive in this case and bates-labeled
14 Intuitive-00552990-Intuitive-00552992.
 - 15 4. Attached as Exhibit 4 is a true and correct copy of e-mail correspondence from
16 Nick Alter, a Senior Analyst – Finance & Sales Operations at Intuitive, to Philip
17 Kim, a Investor Relations at Intuitive, which is dated February 28, 2020, which
18 was produced by Intuitive in this case and bates-labeled Intuitive-00565993-
19 Intuitive-00565994.
 - 20 5. Attached as Exhibit 5 is a true and correct copy of excerpts of the Deposition of
21 Bob DeSantis, which was taken on May 27, 2021 in Rebotix Repair LLC v.
22 Intuitive Surgical, Inc., Case No. 8:20-CV-02274 (M.D. Fla).
- 23
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25
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27
28

1 I declare under the penalty of perjury under the laws of the United States that the
2 foregoing is true and correct.

3 Dated: November 7, 2024

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CERTIFICATE OF SERVICE

I hereby certify that on November 7, 2024, I caused a copy of the foregoing
DECLARATION OF JOSHUA VAN HOVEN IN SUPPORT OF PLAINTIFF SIS's
OPPOSITION TO INTUITIVE'S MOTION IN LIMINE #2, to be electronically to be
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Exhibit 1

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA**

HIGHLY CONFIDENTIAL; SUBJECT TO PROTECTIVE ORDER

SURGICAL INSTRUMENT SERVICE
COMPANY, INC.,

Plaintiff,

vs.

INTUITIVE SURGICAL, INC.,

Defendant.

Case No. 5:21-cv-03496.

EXPERT REPORT

Dr. Russell L. Lamb
President

Monument Economics Group, LLC
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December 2, 2022

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Market constitutes a relevant antitrust product market. I base this conclusion on the fact that there are no functional substitutes for the repair and replacement of EndoWrist surgical instruments. Therefore, given that there are no functional substitutes for the repair and replacement of EndoWrist surgical instruments in the applications for which it is sold, it is not possible for there to be economic substitutes for the repair and replacement of EndoWrist surgical instruments. I discuss the evidence that forms the basis of this conclusion in greater detail below.

i. Third-Party Repairs of EndoWrist Surgical Instruments are Part of the Same Relevant Antitrust Product Market as Replacement EndoWrist Surgical Instruments Sold by Intuitive

54. Evidence I have reviewed demonstrates that third-party repairs of EndoWrist surgical instruments (such as those performed by SIS) were viewed by Intuitive and other market participants and analysts as a competitive threat to Intuitive's sales of replacement EndoWrist surgical instruments. For example, Deutsche Bank published an analyst report in February 2020 covering the "third party risk" to Intuitive's Instruments & Accessories business segment (which includes the sale of EndoWrist instruments) following a recent downgrade of Intuitive's stock in which it concluded:

We believe the Street continues to be overly dismissive of the risk of increasing usage of refurbished da Vinci instruments to Intuitive's top line over the next couple years. Given the abundance of first-hand confirmation from hospital customers that are exploring refurbished instruments, the question is not whether – but rather, how much – Intuitive's business will be impacted.¹²⁸

55. Deutsche Bank further noted that, based on its research, "FDA action to stymie usage of repaired instruments is highly unlikely," and that Intuitive's justification of its cease-and-desist letters to enforce its service agreements on "safety, regulatory, and

¹²⁸ DeSantis Deposition Exhibit 11 at Intuitive-00566055. Regarding how hospitals have been dealing with Intuitive's "pushback strategy" via its "advisement to cease and desist engagement with service providers," Deutsche Bank concluded: "Notably, some hospitals are now beginning to push back on restrictions embedded in their service contracts against third party servicing of da Vinci systems and instruments, questioning the legality and enforceability of such terms of service." See DeSantis Deposition Exhibit 11 at Intuitive-00566055. Deutsche Bank also identified the third-party repair of EndoWrist surgical instruments as a "competitive threat" to Intuitive's U.S. Instruments and Accessories business. See Intuitive-00552993-53014 at 52993.

legal/contractual grounds” are largely irrelevant.¹²⁹ Furthermore, Deutsche Bank estimated that, once repairs of EndoWrist instruments used with model X/Xi da Vinci robots become available, “Intuitive’s top line exposure will increase dramatically – rendering a majority (~58%) of segment sales ‘at risk’ of competitive pressures.”¹³⁰

56. Evidence I have reviewed demonstrates that Intuitive itself acknowledged that third-party repairs of EndoWrist surgical instruments (such as those performed by SIS) were a competitive threat to its sales of replacement EndoWrist surgical instruments. At deposition, Katie Scoville, Director of New Product Verification, Packaging, and Product Labeling at Intuitive, testified that the threat of “third-party EndoWrist refurbishers” would “be a factor in our sales numbers for certain third parties.”¹³¹

57. In a September 2016 internal analysis, Intuitive acknowledged the competitive threat from one such third-party repair company (Rebotix): “Despite the strong technology protections that ISI uses to limit the life of its instruments, there are companies that will attempt to hack that technology and extend instrument life beyond ISI’s specs. There is already one company in Florida (Rebotix) that claims to be able to extend instrument life and is currently attempting to qualify for a CE mark for the life-extended instruments.”¹³² In an internal analysis of options for pursuing a “Remanufactured Instruments” program, Intuitive notes as one of the “Pros” of one option that “Rebotix has potential to impact Si sales, an immediate threat.”¹³³ In an August 2019 analysis of third-party repairs of EndoWrist surgical instruments, Intuitive identified a number of third-party repairers as a competitive threat to their business, and also summarized “rebuttals” to Intuitive’s value proposition pertaining to one specific third-party repairer (Rebotix), as well as various responses to those rebuttals.¹³⁴

¹²⁹ DeSantis Deposition Exhibit 11 at Intuitive-00566057-066. See, also, Intuitive-00552993-53014 at 52997-52998.

¹³⁰ DeSantis Deposition Exhibit 11 at Intuitive-00566072. See, also, Intuitive-00552993-53014 at 53006.

¹³¹ Deposition of Katie Scoville, May 26, 2021 (hereafter “Scoville Deposition”) at 76:19-25. Ms. Scoville also testified that Intuitive “likely discussed revenue implications of third-party refurbishment.” See Scoville Deposition at 76:1-18.

¹³² Intuitive-00102938-989 at 952.

¹³³ Intuitive-00139149-150 at 150.

¹³⁴ Intuitive-00194074-089.

hospitals enter into the Intuitive Service Agreement as a condition of their purchase of a da Vinci surgical robot, as well as Intuitive's continued enforcement of the Intuitive Service Agreement, allowed it to maintain monopoly power in the tied market (the EndoWrist Repair and Replacement Market) during the Relevant Period. I discuss the evidence that forms the bases of this conclusion in greater detail below.

a. Intuitive Dominated the EndoWrist Repair and Replacement Market in the United States During the Relevant Period

113. I discussed above how, according to the DOJ, "courts typically have required a dominant market share before inferring the existence of monopoly power."²⁶⁸ As I discussed above, Intuitive deliberately designed its da Vinci robots to only work with surgical instruments manufactured by Intuitive (EndoWrists). As a result, "the only entity that sells EndoWrists to hospitals is Intuitive."²⁶⁹ However, while there were no other entities that competed with Intuitive for the sale of replacement EndoWrist surgical instruments, Intuitive did begin to face a competitive threat recently from third-party repairers of the EndoWrist surgical instruments originally manufactured by Intuitive, as discussed above. However, as a result of Intuitive's Alleged Misconduct, it was able to maintain its dominance of the EndoWrist Repair and Replacement Market during the Relevant Period.

114. For example, in an August 2019 internal analysis of third-party repairs of EndoWrist surgical instruments, Intuitive found that, since 2016, only 18 accounts had been "affected" in that they had EndoWrist surgical instruments repaired by third-party repairers, a fraction of the installed base of 3,531 da Vinci robots Intuitive had in the U.S. in 2019.²⁷⁰ Intuitive further noted that among the "[a]ccounts affected" worldwide (29 in total), 17 of them were "[n]o longer using reprogrammed instruments" following Intuitive's efforts to enforce the restrictive Intuitive Service Agreement.²⁷¹ Similarly, in a February 2020 analyst report in covering the "third party risk" to Intuitive's Instruments & Accessories business segment, Deutsche Bank, having determined that "FDA action to

²⁶⁸ DOJ Single-Firm Conduct at p. 21.

²⁶⁹ Vavoso Deposition at 59:4-14, 242:2-23.

²⁷⁰ Intuitive-00194074-089 at 077; Intuitive Surgical, Inc., SEC Form 10-K, filed February 7, 2020 at p. 10.

²⁷¹ Intuitive-00194074-089 at 077, 088.

stymie usage of repaired instruments is highly unlikely,” and that “[h]ospitals [are] starting to push[]back on legality/enforceability of terms of service,” forecasted that a “4-6% penetration of Intuitive’s *de novo* instruments on a unit basis in 2021 is reasonable and, based on our additional due diligence, potentially conservative.”²⁷² Based on this forecast, Intuitive would account for the remaining 94 to 96 percent of the EndoWrist Repair and Replacement Market in the U.S.

115. The evidence discussed above demonstrates that Intuitive dominated the EndoWrist Repair and Replacement Market in the U.S. during the Relevant Period. This constitutes another piece of evidence demonstrating Intuitive’s possession of monopoly power in the tied market (the EndoWrist Repair and Replacement Market) during the Relevant Period. In the next section, I discuss evidence demonstrating that the restrictive Intuitive Service Agreement that hospitals were required to sign with every purchase of a da Vinci surgical robot created significant barriers to entry in that they limited rivals’ (including SIS) ability to compete effectively with Intuitive in the EndoWrist Repair and Replacement Market, allowing Intuitive to maintain its dominance of the EndoWrist Repair and Replacement Market during the Relevant Period.

b. Intuitive’s Conduct Prevented Rivals, Including SIS, from Competing Effectively in the EndoWrist Repair and Replacement Market in the United States During the Relevant Period

116. As I previously discussed, one important requirement in determining whether a firm possessed monopoly power is whether barriers to market entry existed that would allow the firm to exercise substantial market power for an appreciable period. Evidence I have reviewed demonstrates that the restrictive Intuitive Service Agreement that hospitals were required to sign with every purchase of a da Vinci surgical robot created significant barriers to entry in that they limited rivals’ (include SIS) ability to compete effectively with Intuitive in the tied market (the EndoWrist Repair and Replacement Market).

117. In a February 2020 analyst report in covering the “third party risk” to Intuitive’s Instruments & Accessories business segment (which includes the sale of EndoWrist

²⁷² DeSantis Deposition Exhibit 11 at Intuitive-00566055-057, 067 (emphasis in original). Deutsche Bank made a similar assessment in a January 2020 analyst report. See Intuitive-00552993-53014 at 52994.

instruments), Deutsche Bank noted: “In no uncertain terms, the standard terms of service outlined in customer contracts state that hospitals are precluded from engaging with third parties as well as the potential consequences of violation – nullification of contracts, product warranties, etc.”²⁷³ Evidence demonstrates that Intuitive took a number of steps in order to prevent hospitals that had opted to have its EndoWrist surgical instruments repaired by a third-party repair company such as SIS from doing so.

118. In particular, following an initial conversation with the hospital in question, Intuitive would send a form letter to the hospital that detailed Intuitive’s concerns with the hospital’s use of third-party repair companies and highlighted that Intuitive considered the hospital’s use of the repair services a breach of Intuitive’s contract with the hospital.²⁷⁴ Those letters also informed the hospitals that if they continued using repair services, Intuitive would cease servicing their da Vinci robots.²⁷⁵ Further, if a hospital continued using third-party repair services after receiving Intuitive’s letter, Intuitive would in fact stop servicing the hospital’s da Vinci robot.²⁷⁶ Intuitive would also void the warranty on da Vinci robots sold to hospitals and refuse to provide any further service under the terms of that warranty.²⁷⁷ Evidence I have reviewed establishes that Intuitive’s overall process in response to learning of a hospital repairing its EndoWrist surgical instruments through a third-party repairer generally took a short period of time: ten business days for the conversation phase, ten business days for the customer letter, and five business days for account termination.²⁷⁸ At some point, hospitals would encounter a service message on the da Vinci robot, and without Intuitive providing service, that da Vinci robot would be unusable for surgery.²⁷⁹

119. As Ron Bair, Senior Director of Services, Innovation, and Product Management at Intuitive, testified, Intuitive enforces the terms of the Intuitive Service Agreement to stop its customers from using reprogrammed EndoWrist surgical instruments.²⁸⁰ Mr. Bair

²⁷³ DeSantis Deposition Exhibit 11 at Intuitive-00566067.

²⁷⁴ Vavoso Deposition at 221:3-222:15; DeSantis Deposition at 267:19-269:3.

²⁷⁵ Vavoso Deposition at 221:3-222:15; DeSantis Deposition at 267:19-269:3.

²⁷⁶ Vavoso Deposition at 223:14-20; DeSantis Deposition at 262:6-263:3.

²⁷⁷ Vavoso Deposition at 223:21-224:19.

²⁷⁸ Deposition of Antonio (AJ) Inacay, June 8, 2021 at 163:1-164:3, Exhibit 7 at Intuitive-00439336.

²⁷⁹ Vavoso Deposition at 227:13-228:18.

²⁸⁰ Bair Deposition at 137:11-137:16.

135. Evidence I have reviewed indicates that the EndoWrist surgical instruments repaired by third parties such as SIS were viewed as functionally equivalent to the replacement EndoWrist surgical instruments sold by Intuitive. For example, in a January 2020 analyst report covering Intuitive, Deutsche Bank noted:

Repaired da Vinci instruments were all manufactured by Intuitive and designed to become disabled for use beyond 10x, but third parties like Restore Robotics have developed technologies to repair these used devices, confirm that functionality and condition have been restored to *de novo* specifications, and then ship them back to the hospitals for additional use.³²¹

Consistent with this finding, Deutsche Bank also noted that there was “[n]o evidence that repaired da Vinci instruments specifically pose a risk to patient safety – in fact, *au contraire*.”³²² Deutsche Bank added: “Bottom line regarding safety is that, despite Intuitive’s view on this point, any material threat to patient safety would surely have prompted immediate FDA field action to stop their usage, which has not been the case.”³²³

136. Also consistent with these findings, in a related matter involving another third-party repairer similar to SIS (Rebotix), Edward Harrich, Director of Surgical Services at Pullman Regional Hospital, testified that the surgeons, first assists, and scrub assists that Pullman Hospital that used “Rebotix-repaired EndoWrists” were not able to “discern any differences between the Rebotix-repaired EndoWrists and the EndoWrists that had not been repaired or serviced by Rebotix.”³²⁴ Mr. Harrich further testified that Pullman

³²¹ Intuitive-00552993-53014 at 52993 (emphasis in original). Deutsche Bank added: “Notably, these devices are typically reparable up to four times. Third party servicing of medical devices has been ongoing for decades, and FDA’s comfort around this practice regarding patient safety is quite clear.” See Intuitive-00552993-53014 at 52993.

³²² Intuitive-00552993-53014 at 52998 (emphasis in original).

³²³ Intuitive-00552993-53014 at 52998 (emphasis in original). In this report, Deutsche Bank included due diligence “feedback from da Vinci surgeons” regarding the use of EndoWrist surgical instruments that had been repaired by third-party repairers. See Intuitive-00552993-53014 at 53000-53002. One such surgeon noted that the “[c]linical experience to date has been positive, with no reports of device malfunction or adverse events.” See Intuitive-00552993-53014 at 53000. Another surgeon noted that the “[c]linical experience has been satisfactory, with no reports of device malfunction or adverse events.” See Intuitive-00552993-53014 at 53001. Another “Surgeon noted that the hospital has had no cases of device malfunction or adverse events, and based on this favorable trial phase experience usage is likely to expand over the next year or two.” See Intuitive-00552993-53014 at 53002.

³²⁴ Harrich Deposition at 38:8-39:3.

140. Similarly, at deposition in a related matter, Edward Harrich of Pullman Hospital testified that the average cost of an EndoWrist surgical instrument purchased from Intuitive was approximately \$2,000, whereas the average cost to have an EndoWrist surgical instrument serviced by Rebotix was approximately \$1,332, which amounted to annual savings to Pullman Hospital of \$62,400.³⁴⁴ Mr. Harrich further testified that Rebotix offered Pullman Hospital repaired EndoWrist surgical instruments at a 40 percent discount off of the cost of replacement EndoWrist instruments from Intuitive.³⁴⁵ In another related matter, Tyler McDonald of Conway Regional Medical Center testified that his hospital observed cost savings from using EndoWrist surgical instruments repaired by third parties, and that “Conway [would] still be refurbishing the instruments today if it could do so.”³⁴⁶ In a January 2020 analyst report covering Intuitive, Deutsche Bank noted that “[m]eaningful operating cost savings opportunity is the key driver compelling hospitals to consider using these repaired da Vinci instruments.”³⁴⁷ Relatedly, a letter sent by third-party repairer Rebotix to hospitals around August 2019 noted that using Rebotix to repair EndoWrist surgical instruments would provide “45% [a]verage saving per instrument,” which would amount to “[a]verage [s]avings of over \$200,000 per year, per S or Si robot.”³⁴⁸

141. Further, evidence I have reviewed demonstrates that the prices Intuitive charged for its EndoWrist surgical instruments were significantly higher than the prices charged by TransEnterix for the surgical instruments used in conjunction with its Senhance surgical robot. For example, in a 2017 internal Instruments & Accessories analysis, Intuitive noted that the “[c]ompetitive [p]osition” of TransEnterix’s Senhance core surgical instruments were that they offered “[u]nlimited” lives, lower per procedure cost” as compared to EndoWrist core surgical instruments.³⁴⁹ Steven D. Schwaitzberg of

³⁴⁴ Harrich Deposition at 68:8-69:4.

³⁴⁵ Harrich Deposition at 88:16-89:14.

³⁴⁶ McDonald Deposition at 17:20-25.

³⁴⁷ Intuitive-00552993-53014 at 52993. As part of this analyst report, Deutsche Bank sought feedback from two hospital supply chain managers (one that oversees purchasing for nine hospitals in the Northeast and the other that is the “SVP of purchasing for a major hospital network comprising 28 hospitals across several states”), who both noted that their “team’s financial analysis points to ‘fairly substantial’ operating cost savings opportunity with usage of repaired instruments.” See Intuitive-00552993-53014 at 53003-53004.

³⁴⁸ Intuitive-00372699-2703 at 2702-2703.

³⁴⁹ Intuitive-00292544-2628 at 2556.

University of Buffalo's Department of Surgery noted in a 2019 interview that a "recent internal review [performed by Kaleida Health in Buffalo, NY] revealed an average instrument cost of \$3,400 per *da Vinci* procedure, which is significantly higher than the projected \$800–1,600 instrument costs for *Senhance*."³⁵⁰ A February 2018 Piper Jaffrey analyst report covering Intuitive found that, despite the surgical robots themselves being priced similarly, "[o]f particular interest to hospitals is the lower per procedure cost of *Senhance* (roughly one-half of what [Intuitive] charges)," adding that one of the pros of TransEnterix's *Senhance* as compared to Intuitive's *da Vinci* is that "[c]laims per-procedure pricing similar to current laparoscopic procedures (~\$700), mainly driven by reusable instruments with minimal disposables per case (for example, each instrument can be used, according to the company, 150-200 times compared to *da Vinci* at ~10-20)."³⁵¹

142. Evidence I have reviewed demonstrates that, had Intuitive not engaged in its Alleged Misconduct and hospitals been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS, at least some hospitals would have paid lower prices for EndoWrist surgical instruments than they did in the actual world. Evidence I have reviewed also demonstrates that Intuitive's Alleged Misconduct caused harm to competition in the tied market (the EndoWrist Repair and Replacement Market) in that hospitals had little choice but to pay higher prices for replacement EndoWrist instruments from Intuitive in order to use their *da Vinci* surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS.

143. For example, in a February 2020 analyst report in covering the "third party risk" to Intuitive's Instruments & Accessories business segment (which includes the sale of EndoWrist instruments), Deutsche Bank included Intuitive's "[l]everaging its dominant market position" as a "[m]itigant[] to [t]hird-[p]arty [e]ncroachment," adding:

While some hospitals are now starting to question the legality/enforceability of contract terms of service, there are also those whose surgeons are simply

³⁵⁰ Perez et al. at p. 6.

³⁵¹ Intuitive-00364420-444 at 423.

unwilling to risk losing access to Intuitive's technologies. We spoke with a supply chain executive of a major academic center that recently began using repaired da Vinci instruments, but upon receipt of an ensuing cease-and-desist notice from the company's lawyers, stopped.³⁵²

This assessment of the effect of Intuitive "[l]everaging its dominant market position" is consistent with the evidence discussed earlier in this Expert Report regarding Intuitive's successful efforts to leverage its restrictive Intuitive Service Agreement that hospitals were required to sign with every purchase of a da Vinci surgical robot to prevent hospitals from repairing their EndoWrist surgical instruments through third parties such as SIS, thus leaving hospitals with little choice but to pay higher prices for replacement EndoWrist instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS.

144. Further, an October 2018 "Qualitative IDI Research Report" prepared by Advantis for Intuitive found:

Cost is still a concern for users of [robotic assisted surgeries], and this can impact the choice of surgical technique (e.g., not using the robot for simple cases), but is more often expressed as a frustration felt due to the monopoly position that da Vinci has, which requires hospitals to buy equipment and maintenance for their da Vinci system directly, with no competition that might improve pricing or generate innovation.³⁵³

A 2013 article titled "The robotic surgery monopoly is a poor deal" noted that "Intuitive Surgical can command high premiums seemingly because of its monopoly position as the sole supplier of soft tissue robotic surgical equipment."³⁵⁴ Also, in November 2016, Dr. William Mayfield, Chief of Surgery at Wellstar Health System in Georgia, stated the following regarding Intuitive:

³⁵² DeSantis Deposition Exhibit 11 at Intuitive-00566074.

³⁵³ Intuitive 00246469-491 at 489 (emphasis in original).

³⁵⁴ Abhishek Trehan and Tristan J. Dunn, "The robotic surgery monopoly is a poor deal," *The BMJ*, Vol. 347, December 19, 2013, 1-2 at p. 1.

Intuitive. As Deutsche Bank noted in a February 2020 analyst report in covering the “third party risk” to Intuitive’s Instruments & Accessories business segment (which includes the sale of EndoWrist instruments), asserted:

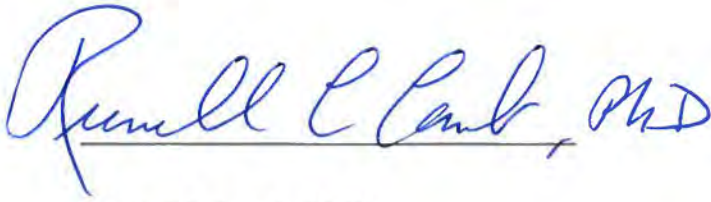
And even with this modest [4-6 percent] unit share capture, the resultant impact to Intuitive’s top-line would be amplified given that each instrument can be repaired multiple times. In our base case scenario of 5% *de novo* unit share capture in 2021 and the assumption that each instrument is repaired 3x on average, our analysis indicates a top-line hit on the order of \$193 million or 3.4% of total company sales in 2021.³⁶⁵

148. The evidence discussed above demonstrates that Intuitive’s Alleged Misconduct caused harm to competition in that, as a result, hospitals had little choice but to pay higher prices for replacement EndoWrist instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS. This evidence is consistent with the evidence I discussed earlier in this Expert Report demonstrating that more hospitals would have had their EndoWrist surgical instruments repaired more often than they otherwise did had it not been for Intuitive’s exclusionary conduct in the form of its requirement that all hospitals enter into the Intuitive Service Agreement as a condition of their purchase of a da Vinci surgical robot, as well as Intuitive’s continued enforcement of the Intuitive Service Agreement.

³⁶⁵ DeSantis Deposition Exhibit 11 at Intuitive-00566056 (emphasis in original). See, also, Intuitive-00552993-53014 at 53007.

VI. Conclusions

149. Based on my analyses and research into the U.S. market for MIST Surgical Robots and EndoWrist Repair and Replacement Market, as well as my training and experience in economics, I have concluded that the market for MIST Surgical Robots in the United States constitutes a relevant antitrust market with respect to the tying market for evaluating the Alleged Misconduct. I have also concluded that the market for EndoWrist Repair and Replacement Market in the United States constitutes a separate relevant antitrust market with respect to the tied market for evaluating the Alleged Misconduct. I have also concluded that Intuitive possessed monopoly power in the U.S. market for MIST Surgical Robots during the Relevant Period. Based on my training and experience in economics as well as my research and analysis into the relevant antitrust markets at issue here, I have also concluded that Intuitive used its monopoly power in the market for MIST Surgical Robots to maintain its monopoly in the EndoWrist Repair and Replacement Market in the U.S. during the Relevant Period. I have also concluded as a matter of economics that Intuitive's Alleged Misconduct was anticompetitive and resulted in harm to competition in that hospitals had little choice but to pay higher prices for replacement EndoWrist surgical instruments from Intuitive in order to use their da Vinci surgical robots than they otherwise would have paid had they been able to repair their EndoWrist surgical instruments through third-party repair companies such as SIS.

A handwritten signature in blue ink that reads "Russell L. Lamb, PhD". The signature is written in a cursive style and is positioned above a horizontal line.

Russell L. Lamb, Ph.D.

December 2, 2022

Exhibit 2

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

SURGICAL INSTRUMENT SERVICE
COMPANY, INC.,

Plaintiff,

v.

INTUITIVE SURGICAL, INC.,

Defendant.

Case No.: 3:21-cv-03496-VC

Expert Report of Richard F. Bero, CPA, CVA
December 2, 2022

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

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fighting other companies, it was us, so the ability to scale was – was huge.

He also testified the potential revenue from the S/Si EndoWrist business was somewhere in the range of \$250 million to \$350 million per year, based on:³⁴²

...conversations I had with key customers to understand the number of robotics they had, the number of robots they had, the dollars spent on devices and instrumentation for those robots, and then looking at our global customer list through Vizient and the opportunities we would have.

Although it lacks SIS’s customer relationships, Restore similarly recognized the demand for repair services. According to Kevin May, Restore’s Operations Officer, there was a high marketplace desire for EndoWrist repairs,³⁴³ and “huge demand” for X and Xi EndoWrist repairs.³⁴⁴ According to Clifton Parker, Restore’s CEO, he expected “70 to 80 plus percent” of hospitals would have used its services to repair EndoWrists.³⁴⁵

In January 2020, a Deutsche Bank Research article was sent in an email to Philip Kim of Intuitive, which included the following about the demand for using repaired da Vinci instruments:³⁴⁶

Our extensive due diligence spanning several months – including conversations with several da Vinci surgeons and supply chain executives. . . yielded confirmation that a growing number of hospital customers, including world-renowned academic centers and even large hospital systems, have begun or are in late stage deliberations/discussions to potentially soon begin using repaired da Vinci Instruments supplied by third-parties. Meaningful operating cost savings opportunity is the key driver compelling hospitals to consider using these repaired da Vinci instruments.

Overall, it is clear there was demand for SIS’s EndoWrist repair services.

³⁴² Deposition of Keith Johnson 17 (October 27, 2022).

³⁴³ Deposition of Kevin May 111 (November 3, 2022).

³⁴⁴ Deposition of Kevin May 99-101 (November 3, 2022).

³⁴⁵ Deposition of Clifton Parker 166-167 (October 25, 2022).

³⁴⁶ Intuitive-00555864-0055866 at 865.

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Based on data from Restore for instruments that were collected, approximately 72% were repairable.³⁸⁶

Given these considerations, and to remain at the conservative end of the repairability range, I apply a 72 % repair yield rate.

(vii) ‘Would-Have-Been’ EndoWrist repair units through 2025

I project the ‘Would-Have-Been’ EndoWrist units through 2025. As noted earlier, I assume trial is approximately December 2023 / January 2024. Assuming SIS prevails, SIS would then begin selling in 2024. A Year 1 conversion would be 2024, Year 2 would be 2025. At the end of Year 2 (i.e., 2025), SIS would achieve its maximum conversion rate.

(viii) ‘Would-Have-Been’ EndoWrist repair units – 2% to 12% of units sold

Accounting for the various factors above, the ‘Would-Have-Been’ EndoWrist repair units approximate a 2%, 8% and 12% penetration rate of Intuitive’s 2020, 2021, and 2022 EndoWrist unit sales, respectively.³⁸⁷

This Would-have-been penetration rate appears reasonable relative to other available data. For example, in August 2019, Intuitive analyzed potential Xi refurbishment and estimated penetration of approximately 41% or 50%.³⁸⁸

Another contemporaneous document, a February 2020 Deutsche Bank analysis, noted a 4% to 6% 2021 penetration rate was reasonable and potentially conservative.³⁸⁹ The analysis also noted each instrument could be repaired three times, suggesting a higher, 12% to 18% penetration rate.³⁹⁰

³⁸⁶ Deposition of Clifton Parker 43-45, 178-179 (October 25, 2022). Per Restore-00094918-00094956 at 922 (Parker Dep. Ex. 121), 215 out of 310 instruments collected in a 2-week sample that had lives on them passed Restore’s inspection (i.e., were repairable).

³⁸⁷ **Schedule 2.2.**

³⁸⁸ Intuitive-00581814-00581883 at 858, 868 and 877. One estimate shows 59,700 refurbished Xi instruments out of a total 144,985 Xi instruments forecasted in 2020. The other estimate shows 72,492 refurbished Xi instruments out of a total 144,985 Xi instruments forecasted in 2020.

³⁸⁹ Intuitive-00566055-00566082 at 056 (Zafar Dep. Ex. 113).

³⁹⁰ Intuitive-00566055-00566082 at 056 (Zafar Dep. Ex. 113).

Exhibit 3

From: Philip Kim [Philip.Kim2@intusurg.com]
Sent: 1/31/2020 4:02:15 PM
To: Dan Jones [Dan.Jones@intusurg.com]; Gary Guthart [Gary.Guthart@intusurg.com]; Glenn Vavoso [Glenn.Vavoso@intusurg.com]; Henry Charlton [Henry.Charlton@intusurg.com]; Jeroen van Heesewijk [Jeroen.Vanheesewijk@intusurg.com]; Marshall Mohr [Marshall.Mohr@intusurg.com]; Myriam Curet [Myriam.Curet@intusurg.com]; Dave Rosa [Dave.Rosa@intusurg.com]; Jamie Samath [Jamie.Samath@intusurg.com]; Andrew Yiu [andrew.yiu@intusurg.com]; Mark Meltzer [Mark.Meltzer@intusurg.com]; Scott Tackett [Scott.Tackett@intusurg.com]; Sal Brogna [Sal.Brogna@intusurg.com]; Brian Miller [Brian.Miller@intusurg.com]; Vincent Delaunay [Vincent.Delaunay@intusurg.com]; Julian Dunnett [Julian.Dunnett@intusurg.com]; Chris Carlson [Chris.Carlson@intusurg.com]; Alexander Roe [Alexander.Roe@intusurg.com]; Kara Andersen Reiter [Kara.Reiter@intusurg.com]; Catherine Mohr [Catherine.Mohr@intusurg.com]; Ryan Shaw [Ryan.Shaw@intusurg.com]; Andrea Miotto [Andrea.Miotto@intusurg.com]; Peper Long [Peper.Long@intusurg.com]; Brent Davidson [Brent.Davidson@intusurg.com]; Jean Yves Raimon [jeanyves.raimon@intusurg.com]; Ben Andrew [Ben.Andrew@intusurg.com]; Jaime Wong [Jaime.Wong@intusurg.com]; Phil Bradshaw [Phil.Bradshaw@intusurg.com]; Aleks Cukic [Aleks.Cukic@intusurg.com]; William Long [william.long@intusurg.com]; Taylor Patton [Taylor.Patton@intusurg.com]; Damien Desmedt [Damien.Desmedt@intusurg.com]; Dirk Barten [Dirk.barten@intusurg.com]; Mandeep Singh Kumar [MandeepSingh.Kumar@intusurg.com]; Austin Kim [Austin.Kim@intusurg.com]; Bob Desantis [Bob.DeSantis@intusurg.com]; Siang Chin [Siang.Chin@intusurg.com]; Heather Drake [Heather.Drake@intusurg.com]; Gina Russo [Gina.Russo@intusurg.com]; Oliver Wagner [Oliver.Wagner@intusurg.com]; Tomer Stavitsky [Tomer.Stavitsky@intusurg.com]; Christina Salys [Christina.salys@intusurg.com]; Scott Mosko [Scott.Mosko@intusurg.com]; Julian Nikolchev [Julian.Nikolchev@intusurg.com]; Peter Arkell [Peter.Arkell@intusurg.com]; Nick Santore [Nick.Santore@intusurg.com]; Calvin Darling [Calvin.Darling@intusurg.com]
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Subject: Investor News: 1/25 - 1/31
Attachments: ISRG DB 1.27.20.pdf; ISRG RJ 1.27.20.pdf; ISRG Wells 1.27.20.pdf; jpm election note 1.31.20.pdf; STRYKER_20200129_0000.pdf; ubs hca note 1-29-20.pdf; bernstein miniaturization piece.pdf; wells coronavirus note 1-28-20.pdf

ISRG ANALYST REPORTS

Deutsche Bank: ISRG: New Self-Manufactured Competitive Risk; Downgrade to Hold "...academic centers and even large hospital systems, have begun or are in late stage deliberations/discussions to potentially soon begin using repaired da Vinci instruments supplied by third-parties."

Raymond James: ISRG: We See a Number of Issues for Refurbished Instruments, Including FDA Clearance "ISRG shares were under pressure today due to competitor concerns predicated on risks to the business from the emergence of 3rd-party system service and instrument refurbishment from Restore Robotics (RR). We have spoken to Intuitive and have reviewed the litigation between RR and the company. In our opinion, there are a number of issues to consider with RR's services, including: 1) the potential need for a 510(k) for a refurbished instrument; RR is replacing parts and a computer chip is reprogrammed, 2) Intuitive's warranty is explicit that any service provided by an unauthorized provider will void the agreement, and 3) RR is not an authorized service provider for Intuitive, and any representations are misleading. Should a refurbished instrument not authorized by Intuitive fail and result in patient harm, there could be

significant legal liabilities to a hospital. In turn, refurbishment is likely to be minimal until litigation plays out...in the case of Masimo, while there was a lot of noise initially, it simply became not worthwhile for hospitals to take on the legal liability to use a 3rd-party reprocessed sensor..."

Wells Fargo: ISRG: Refurbished Instrument Usage May Remain Limited "use of refurbished instruments could be a violation of the FDA standards as instruments are pre-programmed to a specific number of usage for safety reasons...it is likely that use of refurbished instruments would void warranty and put hospitals at risk in case of an adverse event. Thus, we believe that usage will remain limited in the foreseeable future...it is likely that the use of refurbished instruments will remain in limited use due to liability risk..."

OTHER COMPANY NEWS

Wells Fargo: Potential Impact of Coronavirus In China "our contacts are expecting 2-3 times the normal Chinese New Year Effect, since the government is extending the public holiday to take the pressure off employees returning to work... (1) Our contacts are expecting anything 'elective' to see deferred demand (e.g., medical aesthetics and potentially also all the way up to hip and knee procedures) because people just aren't leaving the house unless it's life threatening, and cross-province healthcare demand cannot be served at this time due to the travel bans... (4) There is potential for some re-directed investment within health. For example, there has been a lot of investment flowing into high end oncology resulting from the Healthy China policy (e.g. imaging, radiation oncology, liquid biopsy, etc), but also other chronic health areas (e.g. cardiovascular and diabetes). There is the potential for some of that investment to be re-deployed into Coronavirus research and primary health infrastructure."

JPM: 2020 Election Update: Investors Already Looking Well Beyond Iowa "Current Situation: Sanders leads in IA (Feb 3rd), maintains a sizeable lead in NH (Feb 11th) but faces a sizeable deficit in both NV (Feb 22nd) and SC (Feb 29th). This week Sanders is polling a new, narrow lead in CA (Mar 3rd) and a shrinking deficit in TX (Mar 3rd). A week ago on Jan 24th, Sanders pulled ahead of Biden for the 1st time in the RealClearPolitics avg. betting odds for the Democratic nomination. We've fielded numerous calls from investors who are becoming more nervous about the odds of Sanders winning the Democratic nomination and the resultant impact on stocks. At this point we can merely say that while we believe Sanders' likely wins in IA and NH are well discounted, the stocks could still trade lower on his improving polling in other states like CA. Of course the markets had a similar "moment" w/ Warren that peaked in Oct'19."

MS: Stryker Q419 Earnings Results: Strong Finish; 2020 Upside Expected "Mako: 4Q system placements of 89 (+35 y/y) was the strongest robot quarter since launch and materially ahead our 62 estimate. The TKA utilization trends continue to trend higher growing ~15% in 4Q, which bodes well for placements in 2020. Commentary suggested sales strategy/pricing has not changed, although rental mix may have modestly increased. Japan install base grew to 9 in 4Q (vs. 4 in 3Q), and commentary was notably bullish on the future prospects in this market but it was not the driver in the quarter. China TKA approval is expected later this year, further expanding the TAM. Moving forward, Stryker will no longer be providing quarterly Mako numbers likely in response to Zimmer Biomet's practice."

UBS: HCA Healthcare Q419 Earnings Recap: Strong End to 2019 Positive Skew to Guidance in 2020; Out Year EPS too Low "Quarterly results modestly exceeded Street estimates (+2.5% EBITDA beat) against low expectations w/ a continuation of strengthening end-markets and accelerating volume growth. HCA enters 2020 w/ a strong MDCR pricing backdrop (\$200m tailwind), exceptional visibility around cost controls and solid volume momentum. HCA's leverage is oscillating around historically low levels offering up substantial optionality around capital deployment, in our view, which HCA will deploy in time... SS MCO admits increased +4.7% w/ SS MCO AA up +4.8% which was slightly higher vs. 3Q19 trends"

1/27/20: Titan Medical Receives ISO 13485 Certification, Provides Update on Fourth Quarter Milestones

<https://titanmedicalinc.com/titan-medical-receives-iso-13485-certification-provides-update-on-fourth-quarter-milestones/>

Bernstein: Weekend Pulse: Miniaturization in Medtech enables what was once unthinkable; what could devices look like by 2050? "Engineers believe we can shrink medical devices by 90% again over the next 20 to 30 years while packing even more functionality and connectivity into the technology."

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INTUITIVE

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ISRG DB
1.27.20.pdf



ISRG RJ
1.27.20.pdf



ISRG Wells
1.27.20.pdf



wells coronavirus
note 1-28-20.pdf



jpm election note
1.31.20.pdf



STRYKER_2020...



ubs hca note
1-29-20.pdf



bernstein
miniaturization pi...

From: Nick Alter [Nicholas.Alter@intusurg.com]
Sent: 2/28/2020 8:02:34 AM
To: Nick Alter [Nicholas.Alter@intusurg.com]
CC: Philip Kim [Philip.Kim2@intusurg.com]
Subject: Weekend Reading: Deeper Dive on Third Party I&A Risk; Notes from UBS Doc Panel
Attachments: UBS doc panel w highlight.docx; JPM Jan Hospital Survey 2.20.20.pdf; RJ 2.17.20 Coronavirus note.pdf; MDT 2.19.20 earnings MS.pdf; DB feb 20 precall note.pdf

Happy Friday,

Below I've compiled the latest articles and analyst reports from last week, and **highlighted** reports of key interest. *For any questions regarding the equity research reports below, please contact Philip Kim.*

Also – I'd recommend checking out ISI Podcasts here: [Intuitive Radio](#)

[Battle of the 'bots: 4 robotic surgery rivalries to watch in the year ahead](#)

[J&J's Ethicon mostly fends off Intuitive Surgical's robotic surgery patent challenge](#)

[FDA pilots new 510\(k\) submission template for device manufacturers](#)

ISRG ANALYST REPORTS

Deutsche Bank: Deeper Dive on Third Party Risk to I&A Segment "Medline recently became a distributor for Restore Robotics...expansion of offerings to include repaired X/Xi instruments expected near term."

OTHER COMPANY NEWS

Morgan Stanley: Medtronic Earnings: A Setback Quarter: "F3Q was a challenging quarter driven by a combination of "transient" issues (ERP implementation across MITG; stalled purchasing in CVG; Infuse order timing in RTG) and weaker isolated segment performance. Organic growth of 2.6% reflected ~5 pts of sequential deceleration on a 2-year stack basis...Geoff Martha becomes CEO in April... we expect Geoff to focus on a higher growth profile at the corporate level, including a new level of focus on Diabetes and greater reliance on M&A which has already begun to pick up (e.g. Digital Surgery)."

Raymond James: Coronavirus – Worst is yet to come, Sorry Frank "We increase our likelihood of notable widespread cases in the U.S. from 1 in 7 to **1 in 5**. We note many officials we speak with believe the likelihood is higher. In China, the time from initial virus introduction (we believe probably late November or early December) to reaching epidemic levels took between 7-10 weeks. That means we probably **need to wait another 2-4 weeks** before we can say we will not see a widespread outbreak in the U.S..."

JP Morgan: January Hospital Volumes Survey "Our January hospital survey (306 Hospitals) suggests that total inpatient admissions / commercial admissions / outpatient procedures / ER visits improved / (declined) by approximately +1.9/(-1.3)/+2.2/+2.8% yty, respectively. The Southern region represents ~70% of publicly traded hospital revenues. In a reversal of 2019, Southern trends were barely stronger than the overall U.S. with January IP/Comm/OP/ER +2.2/(-0.8)/+3.1/+2.6% yty, respectively...Leap Year will create a material tailwind in February"

UBS hosted a soft tissue robotics surgeon panel this morning. The panel was constructive for Intuitive and Philip Kim attached his notes (Word doc).

Below is our latest shareholder listing reflecting positions held as of 12/31/19. Our ownership was mostly stable with Fidelity, Capital World Intl, and Alliance adding to their positions.

Rank	Firm	%	Shares	Change	Orientation	City	Style
Top Holders							
1	T. Rowe Price Associates, Inc	8.92	10,347,449	-47,713	Active	Baltimore	GARP
2	The Vanguard Group, Inc.	7.77	9,008,225	98,406	Passive	Malvern	Index
3	Fidelity Management & Resea	5.91	6,857,194	528,373	Active	Boston	GARP
4	BlackRock Institutional Trust (4.59	5,324,812	-128,046	Passive	San Francisco	Index
5	State Street Global Advisors I	4.18	4,844,141	101,876	Passive	Boston	Index
6	Morgan Stanley Investment M	3.36	3,902,680	62,991	Active	New York	GARP
7	Capital World Investors	2.99	3,468,068	8,502	Active	Los Angeles	Growth
8	Edgewood Management LLC	2.35	2,728,095	-14,825	Active	New York	GARP
9	Jennison Associates LLC	2.18	2,528,399	13,527	Active	New York	Growth
10	Baillie Gifford & Co.	1.88	2,177,284	77,477	Active	Edinburgh	Core Growth
11	AllianceBernstein L.P.	1.56	1,808,432	289,059	Active	New York	Core Growth
12	Janus Henderson Investors	1.55	1,798,160	-98,075	Active	London	Core Growth
13	Walter Scott & Partners Ltd.	1.51	1,755,078	-11,006	Active	Edinburgh	Core Growth
14	Geode Capital Management, I	1.39	1,613,934	-197,685	Passive	Boston	Index
15	Nuveen LLC	1.28	1,484,896	-63,235	Active	New York	GARP
16	JP Morgan Asset Managemer	1.26	1,465,888	-39,505	Active	New York	GARP
17	Invesco Capital Management	1.04	1,210,274	3,124	Passive	Downers Grove	Index
18	Norges Bank Investment Man	0.94	1,094,360	57,926	Active	Oslo	Core Value
19	Brown Advisory	0.85	987,155	-7,453	Active	Baltimore	GARP
20	American Century Investment	0.81	940,486	-12,966	Active	Kansas City	Core Growth
Top Buyers							
1	Fidelity Management & Resea	5.91	6,857,194	528,373	Active	Boston	GARP
2	Capital Research Global Inves	0.69	798,964	513,764	Active	Los Angeles	Growth
3	AllianceBernstein L.P.	1.56	1,808,432	289,059	Active	New York	Core Growth
4	Ensign Peak Advisors, Inc.	0.23	271,197	271,197	Active	Salt Lake City	Specialty
5	Morgan Stanley & Co. LLC	0.15	172,880	163,189	Passive	New York	Broker-Dealer
6	Morgan Stanley Private Equity	0.11	131,126	131,126	Active	Seoul	VC/Private Equ
Top Sellers							
1	Winslow Capital Management, LLC		0	-466,772	Active	Minneapolis	Aggres. Gr.
2	Coatue Capital, L.L.C.	0.24	282,798	-250,456	Active	New York	Hedge Fund
3	Geode Capital Management, I	1.39	1,613,934	-197,685	Passive	Boston	Index
4	Lazard Asset Management, L	0.33	382,034	-167,915	Active	New York	Core Value
5	HealthCor Management, L.P.	0.07	83,550	-151,655	Active	New York	Hedge Fund
6	Citadel LLC	0.04	47,564	-135,712	Active	Chicago	Hedge Fund

Best,

Nick Alter

Sr. Analyst

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INTUITIVE

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Norcross, GA 30092

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Exhibit 5

1 IN THE UNITED STATES DISTRICT COURT

2 MIDDLE DISTRICT OF FLORIDA

3 TAMPA DIVISION

4 ---oOo---

5
6 REBOTIX REPAIR, LLC,

7 Plaintiff,

8 vs. Case No. 8:20-CV-02274

9 INTUITIVE SURGICAL, INC.,

10 Defendant.

11 _____/

12
13
14
15 30(b)(6) REMOTE VIDEOTAPED DEPOSITION OF

16 BOB DESANTIS

17 THURSDAY, MAY 27, 2021

18
19
20
21 Stenographically Reported by:

22 ANDREA M. IGNACIO, CSR, RPR, CRR, CCRR, CLR

23 California CSR No. 9830

24 Job No. 194224

1 IN THE UNITED STATES DISTRICT COURT

2 MIDDLE DISTRICT OF FLORIDA

3 TAMPA DIVISION

4 ---oOo---

5
6 REBOTIX REPAIR, LLC,

7 Plaintiff,

8 vs. Case No. 8:20-CV-02274

9 INTUITIVE SURGICAL, INC.,

10 Defendant.

11 _____/

12
13
14
15 REMOTE VIDEOTAPED DEPOSITION OF BOB DESANTIS,

16 taken on behalf of the Plaintiff, on Thursday,

17 May 27, 2021, beginning at 6:36 a.m., and ending at

18 2:50 p.m., Pursuant to Notice, and remotely before

19 me, ANDREA M. IGNACIO, CSR, RPR, CRR, CLR ~ License

20 No. 9830.

1 R E M O T E A P P E A R A N C E S:

2

3 COUNSEL FOR INTUITIVE SURGICAL INC., AND THE

4 DEPONENT:

5 LAW OFFICES OF ALLEN RUBY

6 By: ALLEN RUBY, ESQ.

7 15559 Union Avenue, Suite 138

8 Los Gatos, California 95032

9

10 SKADDEN, ARPS, SLATE, MEAGHER & FLOM

11 By: TAYLOR DOW, ESQ.

12 One Manhattan West

13 New York, New York 10001

14

15

16 COUNSEL FOR REBOTIX REPAIR LLC:

17 DOVEL & LUNER

18 By: ALEXANDER ERWIG, ESQ.

19 LORENZO LAMO, ESQ.

20 CONNIE CHENG, Summer Associate

21 ALEX WALLACE, Summer Associate

22 201 Santa Monica Boulevard

23 Santa Monica, California 90401

24

25

1 R E M O T E A P P E A R A N C E S: (Cont.)

2

3

4 ALSO PRESENT: Kevin Marth, Videographer

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6 ---oOo---

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1 A I don't see it in the folder. Let me
2 refresh.

3 There it is. Okay.

4 So you can still hear me?

5 Q Yes.

6 A Okay. So one question was, can -- when
7 there's a failure non-related to the PEEK ring or
8 adhesive, and you replace an alternate instrument,
9 does it just carry on at the current number of cycles?

10 And the answer is no. In 6.5 of the
11 document, the last sentence of the paragraph refers
12 to:

13 "Use cycling must be re-started on the
14 replacement instrument at Life Cycle zero."

15 Q Great. Thank for clarifying that.

16 A Yeah. And I'm not sure that was the last
17 question, but...

18 Q Well, I just wanted to get some specifics
19 about the actual way that use testing happens here.

20 So you see this is a page titled:

21 "Test Results for Instrument Sample #10."

22 A Yes.

23 Q There's some preconditioning.

24 Do you see that?

25 A Yes.

1 Q And then there's ten life cycles.

2 Do you see that?

3 A I do.

4 Q Is there any indication that these
5 instruments are tested beyond ten life cycles?

6 A No.

7 MR. ERWIG: Stop screen sharing this
8 document.

9 It's a little under an hour, but let's go
10 ahead and take a break.

11 THE WITNESS: Okay.

12 MR. ERWIG: Let's go off the record.

13 THE VIDEOGRAPHER: We are going off the
14 record at 11:02 a.m.

15 (Recess taken.)

16 THE VIDEOGRAPHER: This marks the start of
17 Media No. 4. We are back on the record at 11:12 a.m.

18 MR. ERWIG: Q. Mr. DeSantis, do you have
19 some familiarity with the Extended Use program?

20 A I do.

21 Q What is the Extended Use program?

22 A It's a instrument development program that we
23 commercialized that allowed us to extend the number of
24 indicated lives in some of our Fourth Gen Xi
25 instruments beyond their previously indicated lives.

1 Q So the -- do you know when the da Vinci Si
2 was first released to market?

3 A Did you say Si?

4 Q The Si, yeah.

5 A Si.

6 I know approximately when, yes.

7 Q Can you give me an estimate?

8 A About 2008, 2009.

9 Q 2008, 2009, that's about -- maybe about
10 12 years ago?

11 A Yes.

12 Q At any point in those 12 years, did Intuitive
13 consider extending the lives of the Si EndoWrist
14 instruments?

15 A I don't know previously, previous to my
16 joining the company in 2013. We've had -- there were
17 some conversations about it since then, yes.

18 Q Intuitive concluded that it would not be
19 extending the use counter for the da Vinci Si
20 EndoWrist; is that right?

21 A Correct.

22 Q Now, there have been some changes in the Si
23 EndoWrist over the years; right?

24 A Yes.

25 Q Some materials have been updated; right?

1 A Yes.

2 Q Some parts of the design have made components
3 sturdier, for example, right?

4 A Yes. You know, since -- since we lost the
5 Xi, we had focused all of our efforts on the Xi. But
6 on some things have been back propagated to Si where
7 we could.

8 Q Well, that was going to be my next question.
9 When was the da Vinci Xi launched?

10 A March 2014.

11 Q At any point did Intuitive consider
12 conducting some follow-up testing to determine whether
13 the use counter for the da Vinci Si could be raised
14 from ten uses to an increased number of uses?

15 A This is Si, again, Sam?

16 Q Si.

17 A Yeah.

18 So I -- when we -- when we started talking
19 about could we potentially raise the number of
20 indicated uses on Xi, we had some brief conversations
21 about Si, but not much.

22 Q One thing Intuitive could have done would be
23 to rerun live testing for the Si instruments as there
24 were some changes made to those instruments over the
25 years; right?

1 A Well, we do. Whenever we make a significant
2 impact, we have to revalidate -- or a significant
3 design change, we have to revalidate and we would run
4 live testing on the Si instrument.

5 Q Well, for the extended use instruments, those
6 didn't involve any -- withdrawn.

7 Adding lives to the use counter on the
8 extended use instrument, that didn't involve any
9 significant changes to the instrument; right?

10 A No, that's not correct.

11 MR. ERWING: Let's look at what Intuitive
12 sent to the FDA. The next exhibit is going to be
13 Exhibit 18.

14 (Document remotely marked Exhibit 18
15 for identification.)

16 MR. ERWIG: This will be 8/13/20 Intuitive
17 NFJ to FDA.

18 Q Do you see this on the screen in front of
19 you, Mr. DeSantis?

20 A Yes.

21 Q You see that this is a Non-Filing
22 Justification?

23 A Yes.

24 Q What is a Non-Filing Justification?

25 A It's a regulatory document that justifies

1 that you do not have to submit a regulatory clearance
2 application to the FDA to launch a particular product
3 to commercialize a particular product.

4 Q And Intuitive did not submit a 510(k) to the
5 FDA for extended use instruments; is that right?

6 A Correct. We did a Non-Filing Justification.

7 Q I just want to talk to you a little bit about
8 some of the things that are said in here.

9 So first, you have a table which has
10 "Products and 510(k) Clearance Information"; do you
11 see that?

12 A Yes.

13 Q It lists a number of "Product Base PNs and
14 Names"; do you see that?

15 A Yes.

16 Q Including the "Curved Bipolar Dissector," the
17 "Fenestrated Bipolar Forceps," and so on?

18 A Yes.

19 Q Are those all EndoWrists?

20 I can scroll through the table with you.

21 A Everything I've seen so far is an EndoWrist.

22 Q Okay. On page 4, there's paragraph that's --
23 it has the heading "Description of Proposed
24 Change(s)"; do you see that?

25 A Yes.

1 Q Now, midway down this paragraph it reads,
2 quote:

3 "These instruments are currently rated for 10
4 clinical lives, or human uses. Extending the number
5 of lives does not involve any changes to the intended
6 use(s) or instrument design."

7 Do you see that?

8 A Yes.

9 Q So that's a truthful submission for the FDA
10 in its Non-Filing Justification?

11 A Yes. And my answer earlier was that we did
12 make significant changes, but those do not happen at
13 the time of the submission. They happened over the
14 seven years since we launched the -- the instruments.

15 Q Well, the actual life extension moved from
16 ten lives to 14 lives, that didn't involve any changes
17 to the intended uses or instrument design of the
18 EndoWrist; right?

19 A At the time we did the final qualification
20 and validation, to prove we can go from ten to 14, we
21 didn't make any significant changes to most of the
22 instruments. But we had been making changes to
23 improve durability, reliability on these instruments
24 over the course of seven years that got us to this
25 point to be able to do this validation.

1 Q And for those particular changes, there
2 weren't 510(k)s submitted for those individual
3 changes; right?

4 A I don't know the answer to that.

5 Q Well, let's look at paragraph 8.

6 It says "Analysis of Proposed Changes"; do
7 you see that?

8 A Yes.

9 Q And then there's a table that asks some
10 questions and seems to ask Intuitive to provide some
11 answers; do you see that?

12 A Yes.

13 Q I want to go down to a section titled "Change
14 assessment per FDA Guidance, 'Deciding When to Submit
15 a 510(k) for a Change to an Existing Device.'"

16 Do you see that?

17 A I do.

18 Q A.1 asks:

19 "Change in indications for use statement?

20 Do you see that?

21 A Yes.

22 Q Intuitive answers "No" to that question;
23 right?

24 A I see that.

25 Q Is that true, there's no change in

1 indications for the use statement for the extended use

2 EndoWrist?

3 A That's correct for this -- this NFJ, this

4 Non-Filing Justification, there was no changes for

5 indications for use which refers to a clinical

6 question.

7 Q And you're generally familiar with this

8 Non-Filing Justification to the FDA; right?

9 A At a very high level.

10 Q Now, there's one question under A.4 that

11 reads:

12 "Could change affect directions for use?"

13 Do you see that?

14 A Yes.

15 Q The answer is "No"; do you see that?

16 A I do.

17 Q Now, there's "Technology or performance

18 change?" The answer is "Yes"; do you see that?

19 A Yes.

20 Q I'll discuss that a little bit later down in

21 the flowchart.

22 B.2 reads:

23 "Control mechanism, operating principle, or

24 energy type change?"

25 And the answer is "No"; do you see that?

1 A Yes.

2 Q The answer would have been yes, a 510(k)
3 would have been required; right?

4 A Yes.

5 Q Now B.3 reads:

6 "Change in sterilization cleaning, or
7 disinfection?"

8 And the answer is "No"; right?

9 A Right.

10 Q B.4 is:

11 "Change in packaging or expiration dating."

12 No change there; Right?

13 A Right.

14 Q Then B.5 asks:

15 "Is it any other change in design (e.g.,
16 dimensions, performance specifications, wireless
17 communications," et cetera.

18 Do you see that?

19 A Yes.

20 Q The answer provided is "Yes."

21 Do you see that?

22 A I do.

23 Q Then I want to talk with you about the

24 "Note/Clarifications" on the right-hand side.

25 Do you see that column?

1 A I do.

2 Q And the first thing that is written there is:

3 "Performance specification changed from 10

4 lives to 14 lives."

5 Do you see that?

6 A Yes.

7 Q Does that mean Intuitive has adjusted the

8 usage counter using software to allow extended use

9 instruments to be used for 14 lives instead of 10?

10 A Yeah, I'm going to take just -- I didn't

11 answer that question.

12 I'm just going take a second to read it a

13 little bit.

14 Q No problem.

15 A So the answer is yes to the question. That

16 means that we changed the indicated lives from ten to

17 14.

18 Q And the next paragraph reads:

19 "Based on an initial risk analysis,

20 increasing the number of lives for this instruments is

21 not expected to significantly affect the safety or

22 effectiveness of the device."

23 Do you see that?

24 A I do. It's part of the paragraph. The rest

25 of it is "The life testing conducted for this

1 change..."

2 Q Right. I was -- I was going to get to that.

3 I just wanted to know if you were with me for the

4 first part of the paragraph.

5 A I'm with you for the first part.

6 Q Second part reads:

7 "The life testing conducted for this change,

8 which is identical to the methodology and used the

9 same acceptance criteria to the testing presented to

10 the FDA in the most recent 510(k)s submitted for these

11 instruments."

12 Do you see that?

13 A Yes.

14 Q The actual increase of lives from ten to 14,

15 that did not significantly affect the safety or

16 effectiveness of the extended use EndoWrist; true?

17 A Extending the lives from ten to 14 on -- on

18 these instruments did not change the risk based on

19 live testing we performed, yes.

20 Q And then there's some other questions,

21 including the "Change significantly affects the use of

22 the device?" And the answer is "No"; do you see that?

23 A I do.

24 Q Any new or modified risks? The answer is

25 "No"; right?

1 A Right.

2 Q "Is clinical data necessary?" The answer is
3 "No"; right?

4 A Correct.

5 Q "Any unexpected issues from V&V activities?"

6 What are V&V activities?

7 A Verification and validation activities.

8 Q The answer there is "No" as well; right?

9 A Right, and refers to the life testing
10 verification.

11 Q And then Section C is "Materials Changed"; do
12 you see that?

13 A Yes.

14 Q The answer is "No"; right?

15 A Correct.

16 Q I'm going to stop screen sharing this
17 document.

18 When Intuitive was considering how to extend
19 lives, one factor that Intuitive was considering was
20 what the profit margins would be for different numbers
21 of extended lives; right?

22 A So I -- yes.

23 Q So, for example, Intuitive would analyze, Hey
24 is it more profitable to raise the lives of the
25 extended instruments to 12 or to 14; right?

1 A No, no. That's why I hesitated to that
2 earlier.

3 So this program was not conceived on let's go
4 raise the number of lives of the instruments. It was,
5 we've done all this work to improve the performance
6 and reliability of the instruments. Let's to see if
7 we can or what we can get to for indicated lives. And
8 once we got good results, we then did analyses to
9 determine the profit margin and revenue sharing,
10 et cetera.

11 Q Well, sir, one consider -- withdrawn.

12 One set of considerations when you were
13 developing the extended life instruments was how would
14 offering extended life instruments affect Intuitive's
15 revenue stream; right?

16 A Yeah, the particulars of the question matter
17 to me. When we were -- we really didn't develop
18 extended use instruments. We improved the quality and
19 performance of our existing instruments to the point
20 where we tested those instruments. It's really
21 without any significant change from that point which
22 is why an NFJ and no change to material, et cetera, at
23 that point, was accurate.

24 Once we had the ability to raise the lives,
25 we then made analyses on what's the right financials

1 behind the program

2 Q And when you say "right financials behind the
3 program," that would be, for example, are we going to
4 rate these instruments at 12 lives, at 14 lives, or at
5 16 lives; right?

6 A No, no, no. The life -- the life rating was
7 based on whatever we can get out of them. We tested
8 them, you know, to the point where we can
9 statistically indicate them. That's why we ended up
10 with, in my opinion, a sub-optimal stratification:
11 Sum 12, sum 14, sum 18.

12 It was the most we can get out of them at our
13 statistical testing for our specifications and
14 requirements. That has nothing to do with the
15 financials. It was after we determined the number of
16 lives that we can confidently statistically claim,
17 then how do we price them.

18 Q Sir, is it your testimony that marketing
19 played no role in the development of the extended use
20 instruments?

21 A Not at all, no.

22 Q Was marketing, in fact, very involved in
23 determining the appropriate level of lives to market
24 to customers and how best to package that life
25 increase?

1 A I hear two different questions. One was
2 marketing very involved in determining the number of
3 lives that we would roll out to the field or out to
4 customers? And then, two, how do we -- how do we
5 package that?

6 The number of lives was determined primarily
7 on a -- on the test results of whatever we can get out
8 of them safely.

9 I'm trying to remember. There might have
10 been some situations where we bundled them together.
11 BiPolar might have gotten 15. We said the other three
12 BiPolars were 14, so let's just put them all at 14 for
13 simplicity to the customer.

14 So no, marketing wasn't very involved in
15 establishing the number of lives that we would roll
16 out to the customers. That's not how I would describe
17 it at all.

18 Were they very involved in the roll out of
19 the program, both promotional, pricing, targeting?
20 Absolutely, yes.

21 Q Well, sir, at a certain point, you --
22 withdrawn.

23 You mentioned that the da Vinci Si, that came
24 to market around 2008 or 2009; right?

25 A Yes.

1 Q And over the years there were some -- some
2 changes to the da Vinci Si instruments; right?

3 A Yes.

4 Q And so if you had, at every point, wanted to
5 give the maximum amount of uses to the customer, you
6 would have tested those at various points and seen
7 what the appropriate use limits were; right?

8 A Not necessarily, no.

9 Q Well, if there's an improvement from --
10 withdrawn.

11 The Si instruments, they were typically
12 initially set at ten lives; right?

13 A Yes.

14 Q Now, there might have been some -- withdrawn.

15 Now, there were some changes and updates to
16 various types of instruments over the years; right?

17 A Yes.

18 Q And, for example, in 2012, you could have
19 tested the instruments and seen, Hey, are we seeing a
20 higher number of uses that we can get out of them,
21 right, using our life testing?

22 A We could have, yes.

23 Q And if the instruments had gotten better,
24 that might have shown these can now use -- or your
25 testing method be used for 13 or 14 lives; right?

1 A Yeah, I want to refer back to what I said
2 earlier is that it's not just lives. That there's
3 other variables in play, like customer satisfaction,
4 quality level, RMA levels, et cetera.

5 So as you make improvements or you make
6 changes, the changes may have been reactive to quality
7 problems. They may have been improvements to try and
8 improve a, you know, the durability, reliability. You
9 can either -- you know, that may be intended to drive
10 the quality and customer satisfaction at the currently
11 indicated lives higher.

12 You know, so it's not just making
13 improvement. It's -- it's more lives on the
14 instrument.

15 Q Well, you could certainly have tested the Si
16 instruments in 2013 to determine whether additional
17 lives were warranted; right?

18 A We could have, yes.

19 Q Did Intuitive, in fact, do any such testing?

20 A I don't know.

21 Q Are you aware of any?

22 A Not off the top of my head.

23 We also changed, because of an audit finding,
24 our statistical-based method and the rigor behind it
25 which made things harder in 2014. But anyway the

1 answer is not that I'm aware.

2 Q Now, in 2013, if Intuitive wanted to give
3 hospitals the maximum possible number of uses out of
4 every Si instrument, Intuitive could have tested the
5 Si instruments and seen what the appropriate number of
6 uses was as of that time; right?

7 A That's -- that's one option, yes.

8 Q Instead Intuitive left the life counter for
9 the Si instruments at ten uses; right?

10 A Intuitive was investing heavily in a better
11 platform at that time, so we did not choose to invest
12 in the Si instruments to do a life testing and roll
13 out that program. Correct, we did not do that.

14 Q And so Intuitive left the life counter of the
15 Si instruments at ten uses and didn't try to increase
16 it to 12, 13, or anything else; right?

17 A Correct.

18 MR. ERWIG: Now, I want to screen share our
19 next exhibit. This will be from Folder 3. This will
20 be 9/30/19 DeSantis to Vhee.

21 (Document remotely marked Exhibit 19
22 for identification.)

23 MR. ERWIG: Q. Before I screen share this
24 document, as you were considering rolling out the
25 Extended Lives program to customers, you modeled some

1 different ways to approach the Extended Lives rollout;
2 right?

3 A Yes.

4 Q One way to do it was to not share all of the
5 lives with customers; right?

6 A Maybe I should see the document, but I don't
7 believe we ever considered not sharing all of the
8 lives with the customers.

9 Q Let's take a look at the exhibit.

10 You see this on the screen in front of you?

11 A I do.

12 Q Let's start with the bottom part of this
13 e-mail chain, and we'll just go through it together.

14 Do you recognize this?

15 MR. RUBY: Excuse me. Excuse me, Counsel.

16 Mr. DeSantis, if you want to look at the
17 whole document before you answer any questions about
18 it, you have that right. It's up to you. But if you
19 wanted to look at the whole document, do it now so we
20 don't interrupt the questioning --

21 THE WITNESS: Okay.

22 MR. RUBY: -- so...

23 THE WITNESS: Okay. Can we scroll up? Okay.

24 Scroll to the top, please. Okay. Thank you.

25 MR. ERWIG: Sure. Let me go back to the

1 first e-mail with you.

2 Q Do you -- who is Mark Veeh?

3 A He's an Intuitive employee.

4 Q And what is his role at Intuitive?

5 A He works in finance.

6 Q Does this appear to be an e-mail from Mark

7 Veeh to yourself sent on September 30, 2019?

8 A Yes.

9 Q The subject is:

10 "Extended Lives Revenue Impact on Core."

11 Do you see that?

12 A Yes.

13 Q Mr. Veeh writes:

14 "Hi Bob, wanted to follow up on our" --

15 withdrawn.

16 "Hi Bob, Wanted to follow-up to our

17 discussion about the potential revenue impact if we

18 extended the lives of our core instruments. We took

19 the current core instrument portfolio and mapped it to

20 Cold Core, Bipolar & Monopolar and applied the LRM

21 volumes @ list price to calc the expected current

22 revenue and then looked at it assuming we extended the

23 lives."

24 Do you see that?

25 A Yes.

1 Q Now, can you explain to me what that means?

2 A Yes. So this was very early on in the
3 Extended Life program, I believe, where finance was
4 saying, Okay. If we are able to extend the lives --
5 and I believe this analysis, I'd have to see the
6 attachments -- but I believe this analysis assumed
7 that we kept a list price the same and just extended
8 the lives. So share 100 percent of the cost reduction
9 with the customers.

10 What the revenue impact would be based on our
11 LRM, the long-range model, is just a forecast for
12 the -- for the instruments.

13 Q Thanks. That helpful.

14 And down near the bottom, Mr. Veeh writes:

15 "We can change any of the assumptions" --
16 well withdrawn.

17 Mr. Veeh, near the bottom of this e-mail,
18 writes:

19 "We can change any of the assumptions on
20 lives if needed but was a quick calculation to try and
21 see the potential revenue impact on just the core
22 instruments."

23 Do you see that?

24 A Yes.

25 Q So as of the date of this e-mail,

1 September 30, 2019, Intuitive was considering the
2 potential revenue impact of Extended Life instruments;
3 right?

4 A Absolutely.

5 Q And the assumptions on lives, those were
6 subject to change; right?

7 A Yes. This is a finance person, and that's
8 poorly worded. He meant change the assumptions in the
9 model on how we would price the lives. Not the
10 indicated lives. It needs to be clarified. I'm not
11 quite sure what the intent was here.

12 Q Your response, you write back to Mr. Veeh:

13 "Mark, I should have mentioned - we have only
14 proven this on Xi and therefore should limit the
15 savings estimate to X/X_i . Also, we will keep the
16 Monopolar at 10 lives."

17 A Yes.

18 Q As of this time period, could you have tested
19 the Monopolar instruments to increase the number of
20 lives on those instruments as well?

21 A We could have. We did not.

22 Q Why not?

23 A You know, I mentioned earlier that patient
24 safety, product requirements, our risk analyses go
25 into our specifications, one of which is the number of

1 indicated lives.

2 the Monopolar instrument is our highest risk
3 instrument. The failure modes are the most severe.
4 They are a scissor. They are the high -- highest
5 complaint rate. So there was just -- the risk reward
6 associated with raising the Monopolar instrument lives
7 was -- was not there. Did not make sense.

8 Q As of this time, as of September 30, 2019,
9 had you, with certainty, determined what the number of
10 extended lives would be for each instrument?

11 A I'm sorry. The question?

12 Q Well, as of -- as of the date of this e-mail,
13 September 30th, 2019, had Intuitive determined how --
14 by how many lives each instrument's usage counter
15 would be increased?

16 A I don't know.

17 MR. ERWIG: I'll take this exhibit down.
18 Screen share our next exhibit. This will be
19 Exhibit 20. This will be 11/7/19 da Vinci to Guthart.

20 (Document remotely marked Exhibit 20
21 for identification.)

22 MR. ERWIG: Q. Do you see this on the screen
23 in front of you?

24 A Yes.

25 Q Who is Gary Guthart?

1 A Gary is the Chief Executive Officer of
2 Intuitive Surgical.

3 Q This appears to be an e-mail from yourself to
4 Gary Guthart on November 7, 2019.

5 A Yes.

6 Q The subject is "1:1."

7 What does that mean?

8 A That means we're going to have a meeting,
9 just him and I, one-on-one meeting.

10 Q Then you have some bullet points.

11 Can you give me a sense of what these bullet
12 points reflect?

13 MR. RUBY: And Mr. DeSantis, once again, you
14 have the right to review the entire document before
15 you answer any questions about any part of it.

16 So if want to do that, it would be a good
17 idea to do it now, then the questioning doesn't have
18 to be interrupted, so as you wish.

19 THE WITNESS: Yeah, and if you wouldn't mind
20 just scrolling to the bottom.

21 MR. ERWIG: Sure.

22 THE WITNESS: I saw this one last week. All
23 right oh, okay. Stop. Okay.

24 MR. ERWIG: Q. You said you saw this
25 document last week.

1 What do you mean by that?

2 A I was deposed last week.

3 Q Now, when -- well, can you give me a sense of

4 what these bullet points reflect?

5 A They're topics, potential topics of

6 conversation between Gary and I, myself.

7 Q And one of the bullets says "Extended Life";

8 do you see that?

9 A Yes.

10 Q And there's a few what look like sub-bullets

11 to me underneath that; do you see that?

12 A Yes.

13 Q The first bullet is:

14 "Initial Financial analysis done (will

15 circulate to Jamie/Marshall)."

16 Right?

17 A Yes.

18 Q The second one is:

19 "I requested a sensitivity analysis based on

20 price savings share with customer (10%, 20%...)"

21 Do you see that?

22 A Yes.

23 Q And the third bullet is:

24 "No demands sensitivity modelled."

25 Do you see that?

1 A Yes.

2 Q Now, when you say "A sensitivity analysis
3 based on price savings share with customer," that
4 means -- what does that mean?

5 A Yeah. So it's poorly worded actually. As we
6 were talking earlier, a sensitivity analysis is you
7 adjust one variable and see what affect it has on the
8 other, elasticity.

9 This bullet was a financial analysis, and the
10 second bullet here refers to just the impact to
11 revenue and profit based on what percent of the
12 per-procedure cost savings of the Extended Use program
13 that we would share with the customer.

14 The next bullet talks about what we were
15 talking about earlier, elasticity. And it says we
16 assumed there was no elasticity, that we would have no
17 increase in volume by cutting the price per procedure.

18 Q In other words, the price saving share with
19 the customer, that's how much of the value of an
20 decisional use Intuitive would be sharing with a
21 customer and how much it would be keeping for itself;
22 right?

23 A Yes.

24 Q And so a 10 percent price saving share with
25 the customer means Intuitive would give customers

1 10 percent of the benefit of an extended life, and it
2 would keep 90 percent of that benefit for itself;
3 right?

4 A Yes.

5 Q 20 percent would mean that the customer would
6 receive 20 percent of the benefit of an extended life,
7 and Intuitive would keep 80 per of that for itself;
8 correct?

9 A That's the right interpretation, and Mark's
10 analysis earlier assumed 100 percent.

11 Q You mentioned that an initial financial
12 analysis had been done as well; right?

13 A Yes.

14 Q And the purpose of that initial financial
15 analysis was to determine what sort of revenue impact
16 the extended life instruments would have on
17 Intuitive's revenue streams; true?

18 A Revenues and profits, yes.

19 Q Sure.

20 In fact, there was too significant of an
21 impact on -- well, withdrawn.

22 I want to ask you about one other part of
23 this where there's a bullet labeled "Restore Robotics
24 (aka Rebotix)"

25 Do you see that?

1 A Yes.

2 Q There's a bullet under that that says:

3 "Seeing ramp, but negligible impact on our
4 business."

5 Do you see that?

6 A I do.

7 Q What did you mean when you wrote "negligible
8 impact on our business"?

9 A So the bullet says "seeing ramp." In other
10 words, the volume was increasing. But negligible
11 impact on our business means that overall compared to
12 our business it was relatively low.

13 MR. ERWIG: Let's stop screen sharing this
14 exhibit.

15 Screen share our next document. This will be
16 Exhibit 21.

17 (Document remotely marked Exhibit 21
18 for identification.)

19 MR. ERWIG: This will 11/8/19 Baker to
20 DeSantis.

21 Q You see it on the screen in front of you,
22 Mr. DeSantis?

23 A I do.

24 Q We'll go to the e-mail chain together from
25 bottom to start.

1 Does this initial e-mail appear to be an
2 e-mail from Mark Veeh to Marshall Mohr, Jamie Samath,
3 copying yourself and Tina Todasco?

4 A Yes.

5 Q Who is more Marshall Mohr?

6 MR. RUBY: Excuse me, Counsel.

7 Mr. DeSantis, once again, you have the right
8 to look at the whole document, whether it's front to
9 back, back to front. It doesn't matter. You're
10 entitled to look at the whole thing before you answer
11 any questions about it.

12 So if want to do that, you might want to do
13 that now, because then the questioning can proceed
14 without interruption. And make sure that you have
15 seen the whole document to your satisfaction before
16 you answer it, at any part, any questions about part
17 of it, please.

18 THE WITNESS: Okay. Just to answer that
19 question. Marshall Mohr is the Chief Financial
20 Officer of Intuitive Surgical.

21 MR. ERWIG: Q. Would you like me to scroll
22 up through the -- through the document?

23 A Depends on what your next question is.

24 Q My next question is going to be: Does this
25 appear to be an e-mail from Mark Veeh to yourself and

1 others at Intuitive?

2 A Yes.

3 Q And the subject is:

4 "Extended Lives - Financial Update."

5 Do you see that?

6 A Yes.

7 Q And then Mr. Veeh writes:

8 "Hi Marshall/Jamie, I just wanted to give you

9 an update on the financial status of the extended

10 lives analysis."

11 Do you see that?

12 A Yes.

13 Q And then Mr. Veeh writes:

14 "Below is a first pass based on the following

15 assumptions I have listed out below. This analysis

16 assumes we split evenly the upside with the customer,

17 however, I am working on the sensitivity analysis

18 where we can toggle the % we would share with the

19 customer so we can better understand the potential

20 impacts and tradeoffs."

21 Do you see that?

22 A Yes.

23 Q What was your understanding of the purpose of

24 modeling the price impact of Extended Life

25 instruments?

1 A Again, I'm going to do the scrolling now.

2 Sorry to --

3 Q It's no problem.

4 If you'd like me to scroll through there, or
5 would you like to scroll through on your own?

6 A If you don't mind, you can scroll. Scratch
7 that. I'll call it up.

8 I don't see that document in the folder. Is
9 there an obvious name to it?

10 Q It would be "11'8'19 Baker to DeSantis."

11 A Got it. Okay. Thank you.

12 Would you repeat the question?

13 Q This initial e-mail, Mr. Veeh discusses some
14 financial modeling for the impact of Extended Life
15 instruments on Intuitive's business; right?

16 A Yes.

17 Q Marshall Mohr responds and asks for some
18 potential additional modeling; right?

19 A Yes.

20 Q And then you respond to Mr. Mohr and
21 Mr. Veeh, and write:

22 "Marshall, we're preparing a comprehensive
23 look at the extended lives opportunity to present to
24 OOP."

25 Do you see that?

1 A Yes.

2 Q What is OOP?

3 A The executive team office of the president.

4 Q Now, the next sentence reads:

5 "I had not heard the question about managing
6 multiple life settings. They in fact do this now,
7 haven't heard much about it from the field, but we'll
8 look into it."

9 Do you see that?

10 A Yes.

11 Q When you were mentioning managing multiple
12 life settings, you mean managing instruments that have
13 different levels of use categories; right?

14 A Yes.

15 Q For example, a hospital managing an
16 instrument that has 14 uses, an instrument that has
17 15 uses, and switching that out at appropriate times;
18 right?

19 A Correct.

20 Q And then you forward this e-mail to Dan
21 Baker; do you see that?

22 A Yes.

23 Q Who is Dan Baker?

24 A He's an Intuitive employee.

25 Q And what is his role?

1 A He was in product management, product
2 marketing is the title here for the instrument
3 business.

4 Q And can you say a little bit more about his
5 responsibilities in that role?

6 A So the product management/product marketing
7 are responsible for identifying customer needs, of
8 generating business cases. To some extent, downstream
9 marketing programs to roll products out to the field.

10 Q Now, Mr. Baker responds to you in this top
11 e-mail -- well, withdrawn.

12 Does this top e-mail appear to be an e-mail
13 from Daniel Baker to yourself sent on November 8,
14 2019?

15 A Yes.

16 Q Mr. Baker writes:

17 "Thank you for forwarding. I have a few
18 questions regarding some of the greater context for
19 the project during our 1:1 today."

20 Do you see that?

21 A Yes.

22 Q Mr. Baker writes:

23 "Marshall's feedback is interesting; also
24 contrary to the some of the previous direction
25 (increase lives because competitors will approach

1 20 lives)."

2 Do you see that?

3 A Yes.

4 Q What do you understand that sentence to mean?

5 A Marshall's insights were trading off

6 simplicity for maximizing lives. So Marshall said --

7 his comment said, Maybe we just want to set them all

8 at 15 to make that simpler for a customer to manage in

9 the field. If we did that, we would not be giving the

10 customers all the lives that we could have on some of

11 the configurations.

12 So Dan's comment was -- back was essentially

13 saying, It's interesting, but we know that competitors

14 are talking about more lives, and we should talk about

15 the plus and minus of simplicity versus maximizing

16 lives.

17 Q Any period between 2008 and 2018, to your

18 knowledge, were there any competitors to Intuitive in

19 the United States market with instruments that had

20 20 lives or more?

21 A Talking about robotic competitors?

22 Q Yes.

23 A No.

24 Q And during that period of time, Intuitive did

25 not consider raising the use counters on the

1 instruments for its da Vinci surgical robots; right?

2 A I don't know that it was never talked about.

3 We certainly didn't execute a program to do so.

4 Q When you said "didn't execute a program,"

5 that means that during that time period before this

6 extended use instrument program came up, Intuitive

7 never extended its use counter on any of its

8 instruments; right?

9 A True. Before we extended the use, we -- we

10 never extended the use.

11 Q Well, let me rephrase it just to be a little

12 bit clearer.

13 The Extended Use program was implemented at

14 some point; right?

15 A Yes.

16 Q When was the Extended Use program

17 implemented?

18 A We rolled it out to the -- it depends on what

19 implemented means. So what do you mean by

20 implemented?

21 Q When did Intuitive begin selling extended

22 life instruments in the United States?

23 A I believe that was Q3 2020. Third quarter

24 2020.

25 Q And do you have an estimate around what --

1 what types of months typically are in Q3?

2 A July through September.

3 Q So any point before those extended use

4 instruments came to market, did Intuitive ever release

5 a set of extended life instruments for the da Vinci

6 Si?

7 A Well, we released the 20 life 5 millimeter

8 instruments which is extended compared to the ten life

9 eight-millimeter instruments.

10 Q That's a different type of instrument; right?

11 A It is.

12 Q My question is just specific to the -- to the

13 eight-millimeter instruments.

14 So for --

15 A So --

16 Q -- eight-millimeter instruments on the

17 da Vinci Si, from the moment those instruments came to

18 market, Intuitive never offered an extended life

19 version of those instruments; right?

20 A Correct.

21 Q Intuitive never went very far in a research

22 and development process to try to develop an extended

23 use of those instruments; right?

24 A To my knowledge, the company never formed a

25 formal project with the sole objective of extend -- or

1 any objective of extending the lives on the Si
2 instruments.

3 Q The formal project, that would involve
4 funding; right?

5 A Yes.

6 Q And it would involve a team being put
7 together; right?

8 A Yes.

9 Q And none of that was ever done to examine
10 whether it was feasible to extend use limits on the Si
11 instruments; true?

12 A Yes. To my knowledge, it's true.

13 Q Mr. Baker goes on to write:

14 "I think that it would be good for us to
15 baseline on the overall strategic objective of life
16 extension, and also how it relates to the multiple
17 other ongoing conversations on price reduction to make
18 sure that we hit the mark as we optimize the
19 messaging/strategy on this one."

20 Do you see that?

21 A Yes.

22 Q Mr. Baker refers to the overall strategic
23 objective of life extension.

24 What does he mean by that?

25 A The statement means that it would be good for

1 finance, product management, general manager, myself
2 to all be on the same page for exactly what the
3 objectives of the program are.

4 Q Now, a strategic objective, that's one that's
5 related to a company's business plan moving forward;
6 right?

7 A It would be related to a business plan, yes.

8 Q What is your understanding of the meaning of
9 the term "strategic objective"?

10 A It's -- it's part of the company strategy and
11 objectives.

12 Q The company's strategy, that would include
13 methods for increasing revenue and profits; right?

14 A Yes.

15 Q Does it include methods to position relative
16 to anticipated competitors; right?

17 A Yes.

18 Q And would strategic objectives involve
19 evaluating what sort of approaches are going to be
20 best from the company -- withdrawn.

21 Strategic objectives involve examining what
22 course of action is going to be best for Intuitive in
23 a financial standpoint; right?

24 A Financial would be one aspect of the
25 objective, yes.

1 Q I'm going to stop screen sharing this
2 exhibit.

3 MR. RUBY: Let's take five minutes. Shall
4 we?

5 MR. ERWIG: Let's go off the record.

6 THE VIDEOGRAPHER: We are going off the
7 record at 12:06 p.m.

8 (Recess taken.)

9 THE VIDEOGRAPHER: This starts the number of
10 Media No. 5.

11 We're back on the record at 12:18 p.m.

12 MR. ERWIG: Q. Mr. DeSantis, did Intuitive
13 study marketing strategies to make the Extended Life
14 program appealing to hospitals?

15 A Yes.

16 Q And the reason for that was that Intuitive
17 knew that hospitals might be resistant to the concept
18 of Extended Life EndoWrists; right?

19 A We -- we never -- we had no inclination that
20 they would be resistant to the concept of extended
21 lives, I don't think.

22 Q Well certainly one question that a hospital
23 might have is why were the lives for the da Vinci Si
24 never updated; right?

25 A Yes. That could be, yes.

1 Q And the reason that a hospital might have
2 that question is because the da Vinci Si instruments,
3 those have seen various iterations over the years;
4 right?

5 A We're presuming that they would ask the
6 question and then presuming why they would ask it, so
7 I -- I don't know.

8 Q Well, I just want to get a sense of your
9 understanding of the -- the situation.

10 You think the hospital might have some
11 concerns based on the fact that there was no extended
12 life testing done for the da Vinci Si instruments?

13 A We had the best intentions with the Extended
14 Life program. We tried to optimize it for ourself and
15 for the customers. Sometimes the best of intentions
16 is not communicated correctly. Can be interpreted,
17 you know, sub-optimally. So we considered how to
18 communicate the program properly.

19 Q You mentioned that it was designed with
20 your -- the best of intentions for -- for yourself, as
21 well as for the customer; right?

22 A Yes.

23 Q What -- what advantages would the Extended
24 Life program have for Intuitive?

25 A So I -- one of the customer needs that --

1 that we hear of is reduce cost per procedure.

2 Satisfying a customer need is -- is good for -- for

3 Intuitive.

4 So you know, addressing the customer need and

5 whatever benefits come along with that. You know,

6 customer satisfaction, an increased utilization, brand

7 recognition, et cetera, are all potential positives

8 for Intuitive.

9 Q And continued revenue, that's also a

10 potential positive; right?

11 A Yes.

12 Q And Intuitive wanted the extended use

13 instruments to continue to make Intuitive money;

14 right?

15 A Yes.

16 Q The extended use instruments, they were --

17 withdrawn.

18 The extended use instruments are designed to

19 be used only with the da Vinci surgical robot;

20 correct?

21 MR. RUBY: I'll object. That's been asked so

22 many times. Really, there comes a point. You

23 really -- please, so I don't have to do this.

24 So I'll object -- I'll object to it. It's

25 been asked and answered repeatedly, but the witness

1 can go ahead and answer it again.

2 MR. ERWIG: Mr. Ruby, the question has not
3 been asked with respect to Extended Life EndoWrist,
4 which is specifically the topic that I'm trying to
5 inquire as to here.

6 Q Now, Mr. DeSantis -- withdrawn.

7 Mr. DeSantis, are Extended Life EndoWrists
8 only capable of being used with the da Vinci Surgical
9 system?

10 MR. RUBY: Same objection.

11 You may answer.

12 THE WITNESS: Yes.

13 MR. ERWIG: I'll screen share our next
14 exhibit. This will be 5/10/20 Anderson to Cesnik.

15 (Document remotely marked Exhibit 22
16 for identification.)

17 MR. ERWIG: Q. You see this on the screen in
18 front of you, Mr. DeSantis?

19 A Yes.

20 Q Who is Larry Cesnik?

21 A He's an Intuitive employee.

22 Q What is his role at Intuitive?

23 A He's -- can you scroll down on the document,
24 please. Director of market intelligence.

25 Q You see there's a top e-mail from Katie

1 Anderson at katie@andersonqualitative.com to Larry

2 Cesnik at Intuitive Surgical?

3 A Yes.

4 Q And attachment is "EL Market Research Report

5 KA LC.pptx";

6 Do you see that?

7 A Yes.

8 Q I'm going to take a look at -- withdrawn.

9 Any reason to believe this isn't an e-mail

10 from Katie Anderson to Larry Cesnik sent on May 10,

11 2020?

12 A No.

13 Q Stop screen sharing this exhibit, and we'll

14 screen share the attachment which is "5'10'20 Attach

15 to Anderson to Cesnik."

16 (Document remotely marked Exhibit 23

17 for identification.)

18 MR. ERWIG: Q. You see this on the screen in

19 front of you Mr. DeSantis?

20 A Yes.

21 Q You recognize this?

22 A No, not yet.

23 Q Well, does the first page appear to be the

24 first page of an Intuitive PowerPoint presentation

25 titled:

1 "Extended Life Instruments Messaging

2 Qualitative Key Findings Report"?

3 A Yes.

4 Q Then there's a slide labeled "Background."

5 Do you see that?

6 A Yes.

7 Q There's a few bullet points herein,

8 including:

9 "To accelerate da Vinci surgery adoption in
10 priority markets and procedures where economics is an
11 adoption barrier, Intuitive will be implementing
12 different strategies to reduce price per case for
13 customers."

14 A I see that.

15 Q And then the fourth bullet points:

16 "Three messaging paths have been developed to
17 explain our new Extended Lives program. As it will be
18 initially launched in the U.S., Intuitive leadership
19 has requested feedback on these messaging narratives
20 from senior key U.S. hospital administrators with whom
21 we have strong relationships."

22 Do you see that?

23 A I do.

24 Q Were you aware that messaging paths were
25 being developed as of this time?

1 A Yes.

2 Q I'm going to move to Slide 10, and we'll take
3 a look at some of these messaging pads.

4 This is a slide that's entitled:

5 "Reaction to the general idea of increasing
6 instrument lives and reducing price per use is
7 generally positive, but some need to hear reinsurance
8 about instrument durability as the number of lives
9 increase and which instruments for which procedures."

10 Do you see that?

11 A Yes.

12 Q And there's some "Strengths" to this
13 approach; right?

14 A Yes.

15 Q There's some "Drawbacks" as well; right?

16 A Yes.

17 Q I want to point your attention to the second
18 bullet point under "Strengths" which reads:

19 "The instruments are durability - They are
20 not failing at 10 lives now, so it makes sense to
21 extend the lives."

22 Do you see that?

23 A Yes.

24 Q Is it generally your understanding that
25 Intuitive EndoWrists generally do not fail at

1 ten lives?

2 A So I don't know whose statement that is.

3 Unrelated to that statement, your question is -- is do

4 Intuitive's EndoWrists generally not fail at ten

5 lives?

6 And the answer from me is yes, by my

7 definition of "generally" does not fail. They

8 generally do not fail. We've got acceptable quality

9 levels at -- at the ten life, had acceptable quality

10 levels at the ten life indication.

11 Q On the "Drawbacks" part of this slide there's

12 a section labeled "Durability Concerns"; do you see

13 that?

14 A Yes.

15 Q And under that, it reads:

16 "Currently, some instruments loss

17 effectiveness over time or break. We only get 8 or 9

18 uses instead of 10."

19 Do you see that?

20 A Yes.

21 Q Is it also your understanding that in many

22 cases Intuitive EndoWrists may fail at eight or nine

23 uses?

24 A So we're using terms like "many" and

25 "generally." We have same answer. We've got

1 acceptable quality levels and, you know, we try -- we
2 try and improve them, so...

3 Q I'm going to stop screen sharing this
4 exhibit.

5 Now, Intuitive, when it receives --
6 withdrawn.

7 About how many RMA EndoWrists does Intuitive
8 receive back from hospitals each year?

9 A R -- RMA per procedure is about 2 percent, a
10 little higher. There are typically three to four
11 instruments used per procedure. We did about
12 1.5 million procedures. So 2 percent of 1.5 million
13 would be the way I would estimate it right now which
14 is about 30,000.

15 Q So about 30,000 instruments were RMAed to
16 Intuitive, and is that in 2020? 2019?

17 A It -- either one. It would be close to the
18 year 2019, yes.

19 Q So taking 2019, there may be around 30,000
20 instruments that were RMAed to Intuitive; right?

21 A Yeah, let me check my math.

22 It's a reasonable estimate.

23 Q When an instrument is RMAed, that means that
24 the instrument has experienced some sort of failure
25 before its operational life is -- is up -- well,

1 withdrawn.

2 When an instrument is RMAed, that means it's
3 experienced a failure before its use count is at zero;
4 right?

5 A Perhaps.

6 More accurately, there's some type of
7 complaint against the instrument.

8 Q And those complaints might include that the
9 instrument has experienced some sort of failure prior
10 to the use counter expiring; right?

11 A That's one possibility, yes.

12 Q There might be an issue with the instrument
13 even before it's ever used for -- for a surgery;
14 right?

15 A There could be.

16 Q I want to look at one of those examples with
17 you. We're going to go to folder two. The next
18 exhibit is going to be -- I believe it's Exhibit 24.
19 This will be "7'17'17 DeSantis to Gerbi and McGrogan."

20 (Document remotely marked Exhibit 24
21 for identification.)

22 MR. ERWIG: Q. You see this on the screen in
23 front of you?

24 A Yes.

25 Q I'm going to scroll down to the bottom of the

1 e-mail, and we can look through it together. Just let
2 me know if you'd like me to scroll.

3 A Okay. Scroll. Okay. And scroll up. Okay.

4 Q Do you recognize this e-mail chain?

5 A Yes.

6 Q How is it that you recognize it?

7 A I'm involved in it. I remember the
8 conversation.

9 Q All right.

10 And what do you remember about the
11 conversation?

12 A That there was a -- a defect on one of our
13 instruments and an associated video that I wanted to
14 look into.

15 Q Do you remember viewing that video at the
16 time that you were involved in this e-mail
17 conversation?

18 A Yes.

19 Q And does this initial e-mail appear to be you
20 forwarding "Hook video from Dr. Dickens" to Craig
21 Gerbi and Anthony Mc McGrogan at Intuitive?

22 A Yes.

23 (Video remotely marked Exhibit 25
24 for identification.)

25 MR. ERWIG: I'm going to stop screen sharing

1 this exhibit.

2 Our next exhibit will be that video. It will
3 be "7'17'17 Attached from DeSantis to Gerbi." I'm
4 going to do my best with the tech issues and try to
5 watch that issue together. We likely won't have sound
6 to it.

7 Let me screen share. I just want to get a
8 view, Mr. DeSantis, if this is the video you recall
9 seeing. I'm going to press play.

10 Q Can you see this on the screen in front of
11 you okay?

12 A Yes.

13 Q Can you describe to me what you see is
14 happening in this video?

15 A So someone is manually manipulating the jaw
16 of the hook, Monopolar instrument. And when they do
17 so, there's a protrusion of the electrical wire.

18 Q Does this appear to be the video that you
19 remember watching as of date of that e-mail?

20 A I believe so, yes.

21 Q I'm going to stop screen sharing this
22 exhibit.

23 That would be an example of an instrument
24 that would be RMAed by a customer; right?

25 A It should be, yes.

1 Q Now, returning to the extended life,
2 instruments Intuitive ultimately prepared an FAQ to
3 handle common customer objections to the extended life
4 system; is that right?

5 A I -- I don't know. If you have something,
6 I'd benefit from looking at it.

7 MR. ERWIG: Sure. We'll take a look. Our
8 next exhibit is going to be -- I believe it's
9 Exhibit 26. This will be "7'18'20 Mohr to Rosa."

10 (Document remotely marked Exhibit 26
11 for identification.)

12 MR. ERWIG: Q. You see this on the screen in
13 front of you, Mr. DeSantis?

14 A Yes.

15 Q And there's an e-mail from Daniel Baker to
16 Adelaide Dias, Patrick Clingan, and yourself; do you
17 see that?

18 A Yes.

19 Q And that e-mail Mr. Baker writes:

20 "Notes from today's meeting" -- withdrawn.

21 Does there appear to be an e-mail from Daniel
22 Baker to yourself and others at Intuitive sent on
23 July 17, 2020?

24 A Yes.

25 Q Now, Mr. Baker writes:

1 "Website is still under development/proposed
2 text is attached (note that language has been informed
3 by the customer letter in addition to the FAQs for
4 consistency)."

5 Do you see that?

6 A Yes.

7 Q I'm going to take a look -- and then the
8 e-mail above Mr. Mohr forwards this e-mail to
9 Mr. Rosa; do you see that?

10 A Yes.

11 Q I'm going to take a look at the attachment to
12 this.

13 A Wait. Can I see the e-mail?

14 Q Of course.

15 A I've never seen the e-mail before.

16 Okay. Thanks.

17 Q Actually, one more question about this.

18 Mr. Mohr writes:

19 "Dave, As we discussed the other day, I don't
20 think outward marketing is in the sweet spot of the
21 product marketing team."

22 Do you see that?

23 A Yes.

24 Q What do you understand "the sweet spot of the
25 product marketing team" to be?

1 A So earlier I think you asked me about Dan
2 Baker's responsibility, and I said he's product
3 management, product marketing. And at the end of it,
4 I said he does some downstream marketing in a product
5 out to the field.

6 So this is Marshall talking to Dave and
7 saying that downstream marketing is not the strength
8 of the product management team in the business unit.

9 Q And when you mentioned downstream marketing,
10 that would be marketing to customers like hospitals,
11 for example; right?

12 A Customer-facing, collateral material
13 marketing, yes.

14 Q So there would be some internal discussions
15 about the life extension instruments; right?

16 A Yes.

17 Q And you needed to develop a plan to market
18 those instruments to downstream customers like
19 hospitals; right?

20 A Yes.

21 MR. ERWIG: I'm going to take a look at the
22 attachment to this. This will be Exhibit No. 27.

23 (Document remotely marked Exhibit 27
24 for identification.)

25 MR. ERWIG: This will be 7'18'20 a document

1 Mohr to Rosa. This document is also called "Objection
2 Handling."

3 Q You see this on the screen in front of you?

4 A Yes.

5 Q Do you recognize document?

6 A Not yet.

7 Q Does there appear to be a document titled
8 "Extended Use Program"?

9 A Yes.

10 Q And there's three columns. One is labeled
11 "Objection." One is labeled "Messaging Components,"
12 and one is labeled "Messaging"; do you see that?

13 A Yes.

14 Q Now, I want to go over some of these with
15 you. On page 3, there's an objection that's titled:
16 "Vendors have re-manufactured your da Vinci
17 Si instruments for years, providing uses beyond 10.
18 Why should I not use their services?"

19 Do you see that?

20 A Yes.

21 Q The "Messaging Components" and response are:

22 "Increased use of da Vinci X/Xi instruments
23 are designed and tested to provide decisional uses."

24 Do you see that?

25 A Yes.

1 Q The second bullet:

2 "da Vinci Si instrument re-manufactured have
3 not been tested by Intuitive to add uses."

4 Do you see that?

5 A Yes.

6 Q Is it your understanding da Vinci Si
7 instruments were not tested by Intuitive to add uses?

8 A Yes.

9 Q Not only were da Vinci Si instruments not
10 directly tested by Intuitive, Intuitive never tested
11 the refurbished instruments from third parties either;
12 right?

13 A No, we have not.

14 Q So the -- withdrawn.

15 Intuitive has never taken an instrument
16 refurbished by Rebotix and examined whether it
17 effectively operates with a da Vinci surgical system;
18 right?

19 A Well, we've had a few come back to us. And
20 in our complaints and RMAs, and just like all others,
21 we take and evaluate whether they're working properly.

22 Q Intuitive hasn't, for example, taken an
23 instrument that's in use by the hospital that's an
24 instrument that's been refurbished by Rebotix and
25 performs testing to determine whether that instrument

1 operates appropriately during surgery; right?

2 MR. RUBY: I'm going to object to the form of
3 the question. It's inherently ambiguous. Because
4 what you call "refurbishing," and what the witness
5 might call "refurbishing" might very well be
6 different. And you haven't chosen to define what --
7 you're attaching to the term "refurbishing," and
8 that's where the ambiguity comes in.

9 So my objection is noted. I think there's a
10 question pending, and -- and then you can go ahead and
11 answer it.

12 THE WITNESS: So we have not done V&V or life
13 testing on third-party remanufactured instruments, no.

14 MR. ERWIG: Q. There's been no testing, in
15 fact, of any kind done by Intuitive to determine the
16 efficacy of -- withdrawn.

17 There's been no testing of any kind by
18 Intuitive to determine the safety of instruments that
19 have been modified by Rebotix Repair; right?

20 A Well, we -- we can extrapolate, based on our
21 own testing of our instruments which they are
22 modifying and extending beyond their indicated life.

23 There are, you know, millions of procedures
24 with those instruments and their quality level,
25 et cetera. But have we -- have we done their V&V

1 testing? No, we have not.

2 Q I want to actually -- we're going to get to
3 that a little bit later, but just touching on it now,
4 the testing that Intuitive does is to determine
5 initial appropriate set of uses for an instrument;
6 right?

7 A It depends on what testing we're talking
8 about.

9 Q Well, when Intuitive is bringing an EndoWrist
10 to market, it does life testing to determine the
11 appropriate number of uses that it's going to offer to
12 a customer; right?

13 A We -- we set a spec for the number of lives
14 and then test to make sure we can achieve that in most
15 cases.

16 Q You mentioned you set a spec for a number of
17 lives.

18 That means that Intuitive sets, let's say,
19 the number of times that -- lives desired at 10, and
20 then tests to meet those ten lives; right?

21 A Yes. Single use, ten lives, 20 lives we'll
22 put that requirement and try to achieve that. In
23 other cases, we extend the use. We've done let's --
24 let's evaluate where these instruments stand today,
25 and -- and then bring those to market. So it's gone

1 both ways.

2 Q Now, over time an instrument might experience

3 some -- some wear and tear; right?

4 A Yes.

5 Q And without any sort of attention, that

6 instrument might fail; right?

7 A Potentially.

8 Q And my question is: Has Intuitive --

9 withdrawn.

10 Has Intuitive examined whether it's possible
11 to repair an instrument that's experienced some wear
12 and continue such that it continue to -- such that it
13 can continue to be operated safely?

14 A I'm sorry. Can you re-ask the question,
15 please?

16 Q Sure. Let me ask -- let me ask a better
17 question. Make it a little bit more concrete for you.

18 One of the types of EndoWrists is an
19 EndoWrist that has a pair of scissors on the end;
20 right?

21 A Yes.

22 Q One of the failure conditions for that
23 EndoWrist can be that the scissors become too dull to
24 cut tissue; right?

25 A Yes.

1 Q And when the scissors do, in fact, become too
2 dull, Intuitive classifies that as a failure of the
3 EndoWrist; right?

4 A Yes. If a customer files a complaint and
5 says it's not cutting, we test it to see if it's
6 cutting to our specs. If it's not, we classify that
7 as a failure.

8 Q Well, even before an Intuitive life
9 testing -- dull scissors would constitute a failure of
10 the instrument; right?

11 A I don't understand the question.

12 Q Well, Intuitive initially does some -- some
13 life testing. We discussed that earlier; right?

14 A Yes.

15 Q And for a life test to be a success, the
16 instrument has to operate according to specifications;
17 right?

18 A Yes.

19 Q And so for an instrument to meet its 10 uses,
20 it would have to operate according to those
21 specification for all ten uses; right?

22 A You'd have to statistically justify ten uses
23 so you have to test it beyond ten uses, but yes.

24 Q Now, in the process of testing, if scissors
25 on a pair of EndoWrist that have scissors at the end

1 become dull and they're no longer cutting, that would
2 be a failure; right?

3 A Yes.

4 Q And that could occur at nine uses; right?

5 A Yes.

6 Q Could occur at five uses; right?

7 A Well, the failure could occur at any number.

8 That would fail the test, and we wouldn't

9 commercialize that product if it was during our life

10 testing.

11 Q Well, in fact, Intuitive is aware that some
12 products do, in fact, fail in the market before their

13 use counter has expired; right?

14 A Yes.

15 Q Now, my question is just about the initial
16 testing process.

17 If an instrument fails because its scissors
18 are dull at, let's say, eight uses, does Intuitive try
19 to sharpen or in any way repair the scissors to
20 determine whether the instrument can last for
21 additional lives?

22 A No, I don't believe so. We don't typically
23 do repairs as part of our life testing.

24 Q And so if an instrument failed at, say, eight
25 uses because the scissors were dull, Intuitive would

1 consider that a failure under its life testing; right?

2 A Yes.

3 Q Intuitive would log that and store or dispose

4 of the instrument; right?

5 A Yes.

6 Q Intuitive would not test whether the

7 instrument could continue to operate to 15 or 20 uses

8 with re-sharpened scissors; right?

9 A Not if our spec was ten and there was a

10 failure prior to ten, no.

11 Q In fact, in -- if an instrument -- withdrawn.

12 And that's the same for -- for other types of

13 instruments as well, such as graspers or needle

14 drivers; right? If there's any sort of failure,

15 Intuitive doesn't attempt to repair that failure;

16 right?

17 A Correct. As part of our life testing

18 remanufacturing, it's not part of our life testing.

19 Q In fact, any sort of refurbishing repair is

20 not part of life testing; right?

21 A Correct.

22 Q Now, if an instrument -- the desired spec for

23 an instrument is ten uses and the instrument fails at

24 11 uses, Intuitive doesn't also attempt any

25 refurbishment or repair of that instrument at that

1 point; right?

2 A Correct.

3 Q So if an instrument, for example, failed at
4 11 uses because the scissors had dulled, Intuitive
5 would not examine whether a repair could let that
6 instrument operate safely; right?

7 A Not typically, no.

8 Q I'm going to scroll to the last page of this
9 exhibit. There's an objection that's entitled:

10 "Why is there no 510(k) letter available for
11 the new Part Number."

12 Do you see that?

13 A Yes.

14 Q It mentions "FDA guidance followed"; do you
15 see that?

16 A Yes.

17 Q Was it Intuitive's understanding that
18 validating instruments for the Extended Use program
19 did not require a new 510(k) letter?

20 A Correct. Our -- our program based on our
21 specs and our instruments extending their use we went
22 over earlier, we filed an NFJ, a Non-Filing
23 Justification.

24 Q I'm going to stop screen sharing this
25 exhibit.

1 I want to get a sense of the development
2 timeline for the Extended Use program, and we -- and
3 we went over a little bit of this earlier, but it
4 would be helpful if you can give me just a general
5 range of sort of inception of the program, and you
6 mentioned it came to market around the third quarter
7 of 2020.

8 When was the first time you really thought
9 about extending lives on instruments?

10 A When I think about the Extended Use program
11 and the development time frame, you know, I think
12 about 2014 to 2020 because of all the work that went
13 into continually trying to improve the quality and
14 durability of the instruments.

15 The actual formalization of, Hey, let's --
16 let's see if we actually can extend the lives beyond
17 ten and -- and offer that to customers occurred in
18 early 2019. So it was a -- once we decided to try and
19 do the test, it took about a year to roll it out to
20 the market.

21 Q It took Intuitive about a year from the time
22 that it decided it wanted to extend lives on
23 instruments to roll those extended life instruments
24 out to the market; right?

25 A Yes.

1 Q Now, Intuitive could have developed a similar
2 program in 2016, for example; right?

3 A I -- so I think there's a false assumption
4 here which is we don't know that the instruments in
5 2016 would have been -- would have passed the same
6 number of lives, would have the same durability and
7 quality. So we -- we could have developed a program,
8 done the test, and tried to see what happened.

9 Q And Intuitive didn't, in fact, test to see if
10 lives could have been extended in 2016; right?

11 A No. We were investing in driving up our
12 quality and driving down our complaint rate.

13 Q And that meant that Intuitive was not
14 investing in developing extended lives for EndoWrists;
15 true?

16 A So we -- indirectly we were, but that wasn't
17 our purpose. Our purpose was to improve quality. We
18 eventually turned that effort into an Extended Use
19 program.

20 MR. ERWIG: I'm going to screen share our
21 next exhibit. This will be "11'12'19 Mohr to Rosa."
22 It will be Exhibit No. 28.

23 (Document remotely marked Exhibit 28
24 for identification.)

25 MR. ERWIG: Q. You see this on the screen in

1 front of you, Mr. DeSantis?

2 A Yes.

3 Q I'm going to scroll down to the bottom of
4 this e-mail chain.

5 And do you see that this is an e-mail that we
6 looked at earlier, right, the "Extended Lives -
7 Financial Update" from Mark Veeh to Mr. Mohr and
8 yourself?

9 A Yes.

10 Q We also looked at your response e-mail about
11 managing multiple life settings; right?

12 A Yes.

13 Q And then this e-mail from Marshall Mohr, this
14 is new.

15 Does this appear to be an e-mail from
16 Marshall Mohr to yourself, Mark Veeh, and Jamie Samath
17 on November 10, 2019?

18 A Yes.

19 Q And the subject is "Extended Lives -
20 Financial Update"; right?

21 A Yes.

22 Q Now, in the second to last sentence, Mr. Mohr
23 writes:

24 "I was asked to gather the AMP arrangements
25 to date (which I am doing) and information around what

1 the financial impact of extended lives and collection
2 of instruments would be."

3 Do you see that?

4 A Yes.

5 Q What are the AMP arrangements?

6 A I'm just going to read the e-mail.

7 So "AMP" stands for Advanced Minimally
8 Invasive. I don't know what it stands for, the
9 acronym. But basically our different commercial
10 models where we can provide customer access to the
11 system and charge them differently than just selling
12 the system and selling instruments.

13 Q I'm scrolling up. There's an e-mail from
14 Mark Veeh to Marshall Mohr, yourself, and Jamie Samath
15 saying:

16 "Hello, attached is a workbook where I have
17 added the ability to toggle the discount as well as we
18 can toggle the # of lives for the major groupings."

19 You see that?

20 A Yes.

21 Q Do you recognize that e-mail?

22 A I don't remember this e-mail, but...

23 Q Well, does this appear to be an e-mail from
24 Mark Veeh -- withdrawn.

25 Let's look at the attachment to this e-mail,

1 and let's see if you recognize that.

2 Screen share the next exhibit. This will be
3 attachment to that e-mail chain. It's, in fact, an
4 Excel document. So I'm going to screen share.
5 There's the Bates label Intuitive00581597.

6 (Document remotely marked Exhibit 29
7 for identification.)

8 MR. ERWIG: Q. Do you see this?

9 A Yes.

10 Q At the top, there's a tab labeled
11 "Assumptions"; do you see that?

12 A Yes.

13 Q There's a "Price Discount"; right?

14 A Yes.

15 Q And there's some tabs with "Number of
16 Extended Lives"; do you see that?

17 A Yes.

18 Q There's labels next to those that says "Can
19 adjust these"; right?

20 A Yes.

21 Q Meaning the price discount can be adjusted;
22 right?

23 A Yes.

24 Q So the number of extended lives could be
25 adjusted; right?

1 A Yes.

2 Q And that would affect the different revenue,
3 cost and margin for Intuitive throughout the period
4 between 2019 and 2022; right?

5 A Yes.

6 Q I'll stop screen sharing this exhibit --
7 well, withdrawn.

8 Do you recognize this document?

9 A Not specifically, no.

10 Q Does it appear to be the Excel workbook
11 that's attached to that e-mail thread?

12 A I have no way of knowing.

13 Q Any reason to think that it's not the
14 attachment to that e-mail thread?

15 A Well, we can look at the file name and look
16 at the attachment name and see if they match.

17 Q Stop screen sharing this exhibit.

18 Let's go off the record and take a short
19 break.

20 A How short? How short?

21 Q Let's wait to get off the record, and we'll
22 talk about timing.

23 THE VIDEOGRAPHER: Going off the record at
24 12:58 p.m.

25 (Recess taken.)

1 THE VIDEOGRAPHER: This marks the start of
2 Media No. 6. We're back on the record at 1:06 p.m.

3 MR. ERWIG: I'm going to screen share our
4 next exhibit. I believe this is Exhibit No. 31.

5 (Document remotely marked Exhibit 31
6 for identification.)

7 MR. ERWIG: This will be "3'30'20 Baker to
8 Purohit and Tourand."

9 Q And do you see there on the screen in front
10 of you?

11 A Yes.

12 Q Who is Shreya Purohit?

13 A She's an Intuitive employee.

14 Q What's her role?

15 A She reports to Dan Baker in product
16 management.

17 Q Who is you Todd Tourand?

18 A Same answers. He's an Intuitive employee
19 that reports to Dan Baker in product management.

3 Q During there time period, this e-mail - these
4 e-mails are being sent in March of 2020; right?

5 A Yes.

6 Q During that time period, was Intuitive
7 engaged in modeling revenues for different levels of
8 extended lives on its instruments?

9 A Yes, we were doing financial models of the
10 Extended Use program.

11 Q And one specific thing that was being modeled
12 was how to set the lives of the extended use
13 instruments and what percentage of the benefit to
14 share with the customers; right?

15 A No. Again, we talked about this earlier, and
16 my answer is still the same.

17 So you showed me a couple of brief comments
18 where Marshall had mentioned maybe it would be easier
19 to just, you know set all the lives at 15 for
20 convenience, but that was never really seriously
21 considered. We had really planned on offering --
22 rolling the program out with all of the lives that we
23 were able to statistically justify and test to.

24 But the second half of your question was yes.
25 How we shared that cost savings benefit with the

1 customer was certainly modeled and discussed.

2 Q And one option would be to give the customer
3 all of the benefit of the extended lives; right?

4 A Yes, that's one option.

5 Q Those ultimately were not the options that
6 Intuitive chose; right?

7 A Correct.

8 Q Intuitive determined that it would raise its
9 prices on the extended use EndoWrist; true?

10 A The instrument itself we raised the price on.
11 The price per procedure was reduced.

12 Q And so the up-front cost -- we can take this
13 exhibit down -- withdrawn.

14 The up-front cost to a hospital deciding
15 whether to buy a new EndoWrist, that would be higher
16 to purchase than the extended use EndoWrist; true?

17 A Yes, the up-front cost is higher.

18 Q In other words, the standard instrument might
19 have been priced at 3,000, and the extended use
20 instrument might be priced at 4,000, for example;
21 right?

22 A Just for -- for making up numbers, yes.

23 Q I want to shift gears with you a little bit,
24 Mr. DeSantis, and talk about studies that Intuitive
25 has done in refurbishing and repairing EndoWrists.

1 Are you familiar -- withdrawn.

2 I understand that in 2017 Intuitive
3 considered refurbishing EndoWrists; is that right?

4 A Yes.

5 Q I'm going to screen share our first exhibit
6 or our -- not our first -- our 32nd, in fact, exhibit,
7 which will be in Folder 4. This will be "3'2'17
8 DeSantis to Carlson."

9 (Document remotely marked Exhibit 32
10 for identification.)

11 MR. ERWIG: Q. You see this on the screen in
12 front of you, Mr. DeSantis?

13 A Yes.

14 Q Do you recognize this?

15 A I recognize what it is. I don't remember it.

16 Q Who is Chris Carlson?

17 A Chris is a -- an employee of Intuitive
18 Surgical.

19 Q What is his role at Intuitive Surgical?

20 A Today, he's general manager for the Multiport
21 Platform.

22 Q And what was his role in 2017?

23 A General manager for our Ion Platform.

24 Q Does this appear to be an e-mail from you to
25 Chris Carlson attaching "Instrument eX Report-Out - 30

1 Jan 2017 Final.pptx"?

2 A Yes.

3 MR. ERWIG: I'll stop sharing this exhibit,
4 and we'll take a look at the attachment. This will be
5 Exhibit 33. This will be "1'30'17 Instrument
6 Refurbishment Feasibility Update."

7 (Document remotely marked Exhibit 33
8 for identification.)

9 MR. ERWIG:

10 Q Do you see this on the screen in front of
11 you, Mr. DeSantis?

12 A Yes.

13 Q Do you recognize this document?

14 A I believe so.

15 Q How is it that you recognize it?

16 A So it's a typical PowerPoint template that
17 Intuitive uses, and I recall this type of title on a
18 PowerPoint deck.

19 Q And the title of this PowerPoint is
20 "Instrument eX: I&A Refurbishment Feasibility Update";
21 do you see that?

22 A Yes.

23 Q What do you understand is meant by
24 "instrument" -- well, withdrawn.

25 I&A, that stands for instrument and

1 accessory; right?

2 A Yes.

3 Q What do you understand is meant by "I&A

4 Refurbishment Feasibility"?

5 A Just that, that it was an analysis of the

6 ability to refurbish, remanufacture instruments, and I

7 don't know if there's accessories in this deck or not

8 but...

9 Q And there's some members on this feasibility

10 team here; do you see that?

11 A Yes.

12 Q And there's an agenda, including objective

13 summary, "Objective," "Assumptions," "Proposed

14 Strategy," and so on; do you see that?

15 A Yes.

16 Q There's a section titled "Regulatory

17 assessment"; do you see that?

18 A I do.

19 Q We'll scroll down to that section with you.

20 Does this appear to be a slide titled

21 "Regulatory Assessment"?

22 A Yes.

23 Q Who is Pat Flanagan?

24 A He's a former employee of Intuitive.

25 Q On the next slide, there's a page labeled

1 "Regulatory assessment"; do you see that?

2 A Yes.

3 Q There's a column labeled "Country"; do you
4 see that?

5 A I do.

6 Q And there's a few columns next to that that
7 posts some questions; do you see that?

8 A Yes.

9 Q I can make it a little bit bigger so its
10 easier to see.

11 A Thank you.

12 Q Now, the first column has a question:

13 "Allows sale of refurbished product made
14 anywhere?"

15 Do you see that?

16 A Correct, yes.

17 Q The answer given for the United States is
18 "Yes."

19 Do you see that?

20 A Yes.

21 Q The second column is:

22 "Only allow sale of refurbished product if
23 refurbishing done in country."

24 Do you see that?

25 A Yes.

1 Q And the answer for the United States is "No";
2 right?

3 A Correct.

4 Q And the third column is
5 "Clearance/Registration required?"

6 And the answer for the U.S. is "No"; right?

7 A Correct.

8 Q Was it your understanding that refurbished
9 EndoWrists would be permissible in the United States
10 regardless of where those EndoWrists were made?

11 A Yes. The underlying assumption behind this
12 slide was that this was our internal program and that
13 we would be doing the refurbishing.

14 Q And Intuitive concluded that the refurbishing
15 of the EndoWrist would not require clearance or
16 registration in the United States; true?

17 A True, not if we were doing it.

18 MR. ERWIG: Stop screen sharing this exhibit.

19 This will be our next exhibit. This will be

20 "4'11'17 Boeschenstein to DeSantis."

21 Let me know if I'm butchering that
22 pronunciation.

23 THE WITNESS: He's had worse.

24 ///

25 (Document remotely marked Exhibit 34

1 for identification.)

2 MR. ERWIG: Q. Do you see this on the screen
3 in front of you?

4 A Yes.

5 Q Do you recognize this e-mail chain?

6 A Let me start at the bottom, please. Thanks.

7 I don't remember this e-mail. I recognize
8 what it is.

9 Q Well, you're not on the e-mail chain for a
10 while, and then the e-mail that I want to ask you
11 about is this top e-mail from Curt. Will you
12 pronounce his last name for me, please.

13 A Boeschenstein.

14 Q Thank you.

15 The top e-mail is an e-mail from Curt Boeschenstein
16 to yourself sent on April 11, 2017; is that right?

17 A Yes.

18 Q And Mr. Boeschenstein writes:

19 "Wanted to make sure you had a copy of
20 ReManufacturing Offering given that it may come up
21 this week at Japan Ops meeting."

22 Do you see that?

23 A Yes.

24 Q The attachment is

25 "Refurbishment_Marketing_Jan30_readout.pptx."

1 Do you see that?

2 A Yes.

3 Q The subject of the e-mail is "The Offering -

4 Refurbished"; do you see that?

5 A Yes.

6 Q I want to talk about a couple of the things

7 lower in the e-mail chain. They'll relate to a -- I'm

8 going to go to the first e-mail here. This -- this

9 was forwarded to you; is that right?

10 A Yes, I believe so.

11 Q In the initial e-mail, Glenn Vavosa writes:

12 "In addition to researching the opportunity,

13 I think it is important for the product marketing team

14 to be the one who will draft 'the offering'. It is

15 essentially taking the next step from pricing to

16 promoting the product in a particular market segment."

17 Do you see that?

18 A Yes.

19 Q When Mr. Vavosa refers to the offering, do

20 you understand it to be referring to the refurbished

21 EndoWrist?

22 A It appears that way, yes.

23 Q Is it your understanding that product

24 marketing would be involved in marketing that

25 particular offering to your customers?

1 A That's the suggestion that Glenn is making to
2 Todd and Curt here, yes.

3 Q Do you have a different understanding of
4 product marketing's involvement in the refurbished
5 EndoWrist initiative?

6 A Well, I'd offer two things. One, we never
7 did take it to market, so I can't speak to how it
8 would have played out.

9 Two, there's -- maybe you read into some of
10 the questions back and forth earlier. The role of
11 product management versus downstream marketing is
12 still being clarified in the organization.

13 MR. ERWIG: I'm going to stop screen sharing
14 this exhibit.

15 Our next exhibit will be the attachment to
16 that e-mail chain. This will be "4'11'17 Attached to
17 Boeschenstein to DeSantis."

18 (Document remotely marked Exhibit 35
19 for identification.)

20 MR. ERWIG: Q. You see this on the screen in
21 front of you, Mr. DeSantis?

22 A Yes.

23 Q Do you recognize this document?

24 A I don't remember it specifically yet.

25 Q On this first slide, there's a description,

1 and it describes:

2 "Collection of expired EndoWrists Instruments
3 at the hospital, return to Intuitive Surgical, and
4 receive a refurbished instrument at a lower cost
5 compared to new."

6 Right?

7 A Yes.

8 Q And it details a number of what looks like
9 EndoWrists; right?

10 A Yes.

11 Q "ProGrasp Forceps Refurbished"; right?

12 A Yes.

13 Q The Cadere?

14 A Cadere.

15 Q "Cadere Forceps Refurbished."

16 Thank you.

17 A Yes.

18 Q "Fenestrated Bipolar Forceps Refurbished"?

19 A Yes.

20 Q And others on that page as well; right?

21 A Yes.

22 Q Now on Slide 2, there's a title labeled:

23 "Instrument Refurbishment Program Benefits."

24 Do you see that?

25 A I do.

1 Q And there's a few columns labeled "Clinical
2 Performance," "Economic Benefits" and "Operational
3 Benefits"; do you see that?

4 A Yes.

5 Q Under "Clinical Performance," the first
6 bullet point reads "Equivalent performance" right?

7 A Yes.

8 Q Do you understand that to mean refurbished
9 instruments would have new equivalent performance to
10 new EndoWrist?

11 A Yes. We wouldn't release instruments to the
12 field that had inferior performance than our specs.

13 Q And the second bullet point is:

14 "10 lives per instrument."

15 Right?

16 A Yes.

17 Q That would mean the refurbished instruments
18 would have a 10-life use counter on them as well;
19 right?

20 A Yes, according to the slide.

21 Q And was that your understanding in the
22 development of this program that the purpose was to
23 refurbish instruments and resell them to customers
24 with a new 10-life use counter?

25 A So I'd actually like to take a chance to read

1 the e-mail and the deck, because we looked at this
2 opportunity a few different times, and I need to kind
3 of clarify where we were at this point in time.

4 So I'll go into the folder and grab the
5 e-mail, and can you help me with the e-mail name?

6 Q Sure. It's "4'11'17 Boeschenstein to
7 DeSantis."

8 A That's attached. Okay. I'm struggling to
9 download the attachment. Okay. Thank you. I know
10 that took a while.

11 Q No problem.

12 A So --

13 Q I can read the question, if it would be
14 helpful.

15 A Sure. Thank you.

16 Q As of April 11, 2017, was it your
17 understanding that refurbished instruments could
18 provide equivalent performance to new instruments?

19 A Yes.

20 Q Is it your understanding that those
21 refurbished instruments would have equivalent cleaning
22 and sterilization processes as new instruments?

23 A Yes, they would be -- so yeah, this program
24 is why I had to read it.

25 As with our subsequent programs, it involved

1 collecting instruments, disassembling the instruments,
2 harvesting some parts that could be reused,
3 supplementing those parts with new parts, based on our
4 engineering judgment, and life testing and testing the
5 instruments to all of our specifications to ensure
6 that they met our specifications, including the
7 ten lives.

8 Q At any point during this process, did
9 Intuitive conclude that instrument refurbishment was
10 not possible?

11 A So according to that process I just
12 described, we had -- we had some success in testing,
13 and I can't recall exactly. I think we had some
14 challenges also. But key to it was what parts did we
15 have to or were we -- were we able to reuse versus
16 what parts did we have to provide new.

17 And then, yeah, I'll leave it at that.
18 Sorry.

19 Q And there were certain other -- withdrawn.

20 During the refurbishment process, did
21 Intuitive examine whether individual parts could be
22 refurbished, that is, a component of an EndoWrist
23 could be brought back to a like-new specification?

24 A Well, what we did was take the instruments
25 apart and -- and based on, you know, the expertise and

1 knowledge of our instruments, we made engineering
2 judgments on which parts could potentially be reused
3 and which ones did we know should not be reused. And
4 then we did that development along with V&V.

5 And I believe we adjusted, based on the
6 results, which parts were being reused versus not.
7 But did we try and remanufacture individual
8 components? I don't believe so. It was either use
9 them or not.

10 Q So the process of this program was to take
11 parts of different EndoWrists and effectively cobble
12 them together to create a refurbished EndoWrist;
13 right?

14 A No, I wouldn't phrase it like that.

15 MR. RUBY: Wait, wait, wait. Excuse me. I'm
16 sorry. Mr. DeSantis, I had my phone mute. Sorry to
17 interrupt you.

18 I'll object to that question. "Cobble
19 together," that's an argumentative question, and I
20 object to it.

21 You may go ahead and answer, subject to
22 objection.

23 THE WITNESS: Yeah. Both in the wording and
24 in kind of the intent, that -- that's not how we did
25 it. We didn't take instruments and take them apart

1 and then take good parts from one and good parts from
2 another and put them together.

3 We were very concerned with obviously quality
4 and performance. But also traceability, which means,
5 you know, if you have harvests parts that come out in
6 the field and you ship a lot of new instruments out,
7 and you have to be able to record, you know, in our
8 quality records what the pedigree of those instruments
9 are. In the case of inequality problems or recalls,
10 then we know which instruments to go out and get.

11 So what I'm really saying is, we didn't take
12 different instruments and mix together parts. We took
13 instruments apart, and we said we're going reuse
14 cables, jaws, tubes, for example. And we will add new
15 inputs, pulleys, chassis, housings, again, for
16 example, on all of them.

17 So there was we will harvest these certain
18 components from the ones coming back from the field on
19 all of them. We'll add new components out of -- that
20 we purchased from our suppliers to all of them. We
21 would maintain our traceability and ship -- ship them
22 out into the field after we did our V&V life testing.

23 MR. ERWIG: Q. So to be clear, Intuitive
24 would take certain components from EndoWrists that it
25 collected; correct?

1 A Yes.

2 Q It would supplement those components with new
3 components as needed; right?

4 A Yes.

5 Q And throughout the process of testing those
6 EndoWrists, the refurbished EndoWrists were equivalent
7 in performance to the brand new EndoWrists that
8 Intuitive would sell to customers; true?

9 A I don't recall all the test results, but it
10 would have been a requirement.

11 Q Well, do you recall if during this process
12 there was any sort of test result that indicated that
13 refurbished instruments would not be able to operate
14 at the same level as new instruments?

15 A Again, I don't remember the results
16 themselves, but what we -- we were doing was is a
17 development program. So we would have adjusted our
18 mix of harvested parts or reclaimed parts with our new
19 parts until we were able to get instruments that
20 performed at our quality levels and our
21 specifications.

22 Q Now, the next slide titled -- well,
23 withdrawn.

24 It mentions a section on brand position; do
25 you see that?

1 A I do.

2 Q I'm going to stop screen sharing this
3 exhibit.

4 Now, did Intuitive ultimately adopt --
5 withdrawn.

6 That refurbishment program, that's also been
7 referred to as Project Dragon; is that right?

8 A So I believe we had at least two iterations
9 of programs that looked at remanufacturing,
10 refurbishing. One of them was certainly called
11 Project Dragon, yeah. It was the same type of program
12 if it wasn't that one example.

13 Q You mentioned two different types of --
14 withdrawn.

15 You mentioned two programs. What can you
16 tell me about each of those programs?

17 A They were essentially the same program at
18 two different points in time.

19 Q And what were those two different points in
20 time?

21 A So 2017 was the initial, and I don't recall
22 when Dragon was, but I don't recall the date of
23 Dragon.

24 Q At any point since 2017, has Intuitive, in
25 fact, implemented a refurbishment program?

1 A No, we have not.

2 Q Why not?

3 A We determined that the cost to produce
4 remanufactured instruments at the specs and quality
5 levels of a new instrument would be too close to the
6 cost of just manufacturing new instruments with all
7 new parts. So financially it didn't -- we weren't
8 motivated to develop and implement the program.

9 Q One of the initial objectives of Project
10 Dragon was to increase entry barriers for third-party
11 re-programmers; right?

12 A I missed part of the question. Sorry.

13 Q One of the objectives of Project Dragon was
14 to increase entry barriers for third-party
15 re-programming of EndoWrist; true?

16 A It was a -- it was a lower-level
17 consideration. You know, so we were looking at
18 primarily being able to offer reduced costs to the
19 customers. And then there were a couple of secondary
20 considerations. One of them was reducing waste into
21 the environment. And the other one was, you know,
22 protecting our brand and our quality from, you know,
23 third parties who are remanufacturing adulterating
24 instruments not to our specs.

25 Q Well, sir, how did you know a third party is

1 not refurbishing to Intuitive's specifications?

2 You haven't tested the instrument; right?

3 A So two different questions.

4 We have not done V&V testing on a third
5 party. But our -- our specifications and our
6 requirements are our intellectual property of the
7 company which we've not released. So I don't know how
8 a third party would be able to ensure and guarantee
9 that their quality system -- that they were developing
10 to our specs, that their quality system was sufficient
11 and on par with us, et cetera, et cetera.

12 That's really, you know, a lot of the
13 investment that we've put in the -- into the company
14 to develop those specific types of things.

15 Q Well, you certainly don't have -- withdrawn.

16 Intuitive has not performed any sort of
17 testing of third-party instruments that would --
18 withdrawn.

19 Intuitive has not performed any instruments
20 refurbished by Rebotix to determine whether or not
21 they perform to in Intuitive's specifications; right?

22 A We have not done V&V or life testing on their
23 instruments, no.

24 Q And in fact, Intuitive has done no testing of
25 any kind on Rebotix 's instruments to determine

1 whether they function safely with da Vinci robots;
2 true?

3 A For some reason your audio is glitching a
4 little bit. I missed the word right before robots.

5 Q Let me re-ask it. Withdrawn.

6 Intuitive has not done testing of any kind to
7 determine whether Rebotix's refurbished EndoWrists can
8 safely be used with the da Vinci robot in surgery;
9 true?

10 A True. We've not done V&V testing, life
11 testing on their instruments, no.

12 MR. ERWIG: I'm going Screen Share our next
13 exhibit. This will be "5'23'17 DeSantis to Goodson,
14 et al."

15 (Document remotely marked Exhibit 36
16 for identification.)

17 MR. ERWIG: This will be, I believe,
18 Exhibit 36.

19 Q You see this on the screen in front of you,
20 Mr. DeSantis?

21 A Yes.

22 Q Do you recognize this document?

23 A Let me take a look at it.

24 Q Sure.

25 A In one doesn't ring a bell off the bat. Can

1 I see the bottom of it, please. Okay.

2 Yeah. Sorry. I don't really remember this
3 exchange, but I can identify it.

4 Q Does this appear to be an e-mail sent from
5 yourself to Nicky Goodson, copying Patrick Flanagan,
6 Katie Scoville, and others?

7 A Yes.

8 Q The subject is "Instrument eX update for
9 Bob"; do you see that?

10 A Yes.

11 Q What is Instrument eX?

12 A It's the program we were just talking about.
13 The remanufacturing of -- of the Core instruments.

14 Q So --

15 A Sorry. EndoWrist instruments.

16 Q So Instrument eX, Project Dragon and the
17 refurbishing program, this would all be the same names
18 for the program that we have been discussing about
19 collecting EndoWrists from customers; right?

20 A Yes.

21 Q I'm going to open the attachment to this.
22 Well, withdrawn.

23 Do you see this an attachment labeled
24 "Instrument eX update for Bob.docx"?

25 A Yes.

1 MR. ERWIG: Screen share that attachment
2 next.

3 This will be Exhibit 37.
4 (Document remotely marked Exhibit 37
5 for identification.)

6 MR. ERWIG: This will be attach one to
7 DeSantis to Goodson.

8 Q You see this on the screen in front of you?

9 A Yes.

10 Q At the top there's a title:
11 "Instrument eX Update (Code Name: Dragon):
12 As of 23 May 2017."

13 Do you see that?

14 A Yes.

15 Q Do you recognize this?

16 A Again, I don't remember this specific
17 document.

18 Q Any reason to believe this isn't the
19 attachment to the e-mail?

20 A No.

21 Q Now, you'll see there's a PowerPoint embedded
22 in this document labeled "Draft 518 Secondary
23 Markets." And we'll look at that in a little bit, but
24 do you see that on the screen in front of you?

25 A Yes.

1 Q I want to talk about there document itself.

2 The first heading is labeled "Marketing

3 Updates"; do you see that?

4 A Yes.

5 Q And there's a few subheadings. One is

6 labeled "User Needs"; do you see that?

7 A Yes.

8 Q Another is labeled "Company Objectives"; do

9 you see that?

10 A Yes.

11 Q Now, in the "Company Objectives," the first

12 bullet point is "Create capital Advancement"; do you

13 see that?

14 A Yes.

15 Q What do you understand "capital Advancement"

16 to mean?

17 A So the "Create capital Advancement" means

18 create demand for our robot itself.

19 Q Creating demand for the robot itself, that

20 would be advantageous for Intuitive; right?

21 A Yes.

22 Q It means that Intuitive could sell more

23 da Vinic platforms; right?

24 A Yes.

25 Q And make money off of the sales of those

1 robots; right?

2 A Yes.

3 Q The next bullet is "Offensive Revenue and
4 Margin Protection"; do you see that?

5 A I do.

6 Q It reads:

7 "Create lower pricing option while
8 maintaining acceptable margins."

9 Do you see that?

10 A Yes.

11 Q What is an acceptable margin?

12 A That's a great question. I mean the
13 definition of the term "acceptable margin," margin are
14 our product margins. Acceptable, the words, you know
15 what the word mean. Exactly what an acceptable margin
16 is to Intuitive is the part where it gets really hard
17 to -- to define.

23 Q And is it your understanding based on the
24 cost of the reclaiming and remake- -- withdrawn.

25 Is it your understanding that the reclaim --

1 withdrawn.



7 Q It's not on this page. I was just wondering
8 if you had a general sense of what the margins were on
9 the refurbished instrument program.

10 A I don't remember.

11 Q Do you have a ballpark sense?

12 A As I was saying earlier, financially, the --
13 the program didn't look like a winner for us, so I
14 don't know what that would mean. I don't remember
15 what the margins were in particular.

16 Q You mentioned financially the program didn't
17 look like a winner for you.

18 That's why it wasn't implemented; right?

19 A Right. We -- as I said, it -- the cost it
20 would take us, the all-in cost it would take us to
21 disassemble, remanufacture instruments, some old, some
22 new parts was about equivalent what it would take us
23 to manufacture instruments with all new parts from
24 scratch because of the work that's required to ship it
25 back and sterilize, clean it, disassemble, et cetera.

1 Q Now, under the third bullet point under
2 "Company Objectives," there's a section titled
3 "Defensive revenue and margin protection."

4 Do you see that?

5 A Yes.

6 Q The first bullet under that is:
7 "Displace non-validated 3rd party
8 re-programmers were already present."

9 Do you see that?

10 A Yes.

11 Q Was one of the company objectives for the --
12 withdrawn.

13 Was one of the company objectives for Project
14 Dragon was to displace non-validated third-party
15 re-programmers?

16 A Again, it was one of the lower-level
17 objectives, and it was concerning the unvalidated
18 part, non-validated part specifically.

19 Q Well, there's three bullets under "Company
20 Objectives"; right?

21 A Three main bullets, yes.

22 Q First one we talked about is cap, "Creating
23 capital Advancement"; right?

24 A Yes.

25 Q That means increasing the number of da Vinci

1 robots sold; right?

2 A Yes.

3 Q Second one is "Offensive revenue and margin
4 protection."

5 Can you explain to me in general terms
6 what -- what that means?

7 A Generating more procedures, more growth, and
8 the resulting revenue, and trying to do so at a, you
9 know, quote unquote "acceptable" margin.

10 Q And "Defensive revenue and margin
11 protection," what does -- what does that refer to?

12 A So margin production there means the same
13 thing. Defensive revenue would be not having our
14 revenue decline.

15 Q Now, these were three company objectives that
16 was important to Intuitive when it was pursuing a
17 refurbished program; right?

18 A Well, this is one document in many. A
19 sub-document written to me, you know. Again, the
20 company stance was is, how do we offer our platform
21 to -- to -- to more surgeons, more patients. How do
22 we do so in a safe manner?

23 When it came to other people doing the same,
24 you know, our concern was sure. Dilution of revenue.
25 But dilution of the quality, the brand, and the impact

1 on patients. Because when it comes to robotic
2 surgery, the trust and quality level to use the
3 platform is paramount. And if you don't have that, it
4 could destabilize the entire platform.

5 So having somebody else adulterate our
6 instruments to some -- at least to us, unknown specs,
7 was and is a concern

8 Q Well, so on this slide the bullet point that
9 includes "3rd party re-programmers," that's titled
10 "Defensive revenue and margin protection"; right?

11 A Yes.

12 Q It's not titled, for example, safety concerns
13 and brand protection; right?

14 A On this slide, it only says "non-validated"
15 which would allude to that, but we have seen it on the
16 other slides and decks.

17 Q Well, sure. But I'm just generally trying to
18 get a sense of the company objectives as they relate
19 to revenue and margin protection.

20 And that's one of the objectives that's
21 listed on this slide is the defensive revenue and
22 margin protection as it relates to third-party
23 re-programmers; right?

24 A On this particular document, it talks about
25 defensive revenue and margin protection, and I can't

1 answer the question in isolation. I mean, if you just
2 took this document as the only thing that we looked at
3 and said, Okay. What does it mean? Right. I would
4 say, Okay. It means making sure our revenue doesn't
5 go down. Doesn't go down do to nonvalidated third-party
6 re-programmers.

7 But I have to answer with what our knowledge
8 of what our intent was and what the program was. It
9 was about more access to our platform which we think
10 is a good thing, more access to the platform at our
11 specs which we they think is a good thing, and not
12 having people to use the platform to un-validate specs
13 which we think is a very dangerous thing.

14 Q The second bullet point is:

15 "Reclamation removes product from field
16 increase entry barriers for other 3rd party
17 re-programmers."

18 A I do.

19 Q One of the benefits of the instrument
20 refurbishment program to Intuitive is that program
21 would increase entry barriers for third-party
22 re-programmers?

23 A Yes, for all of the reasons I just talked
24 about.

25 Q And the next bullet point is:

1 "Create more robotic volume for
2 cost-conscious accounts and increase barrier for
3 robotic competition to enter in these accounts."

4 Do you see that?

5 A Yes.

6 Q And when it says "Increase barrier for
7 robotic competition to enter," those would be --
8 withdrawn.

9 When that bullet point says "Increase barrier
10 for robotic competition to enter in these accounts,"
11 that would include potential competitors like
12 Johnson & Johnson; right?

13 A Yes.

14 Q And one of the things that Intuitive wanted
15 to do with their refurbished instrument program was to
16 increase the barrier for robotic competition to enter;
17 right?

18 A Again, it was a lower-level consideration to
19 increase our offering versus our competitors', and we
20 knew that the competitors' primary tactic was going to
21 be lower the cost.

22 Q Now, sir, when you were -- withdrawn.

23 The reason that the Dragon Program --
24 withdrawn.

25 You mentioned that the purpose of the

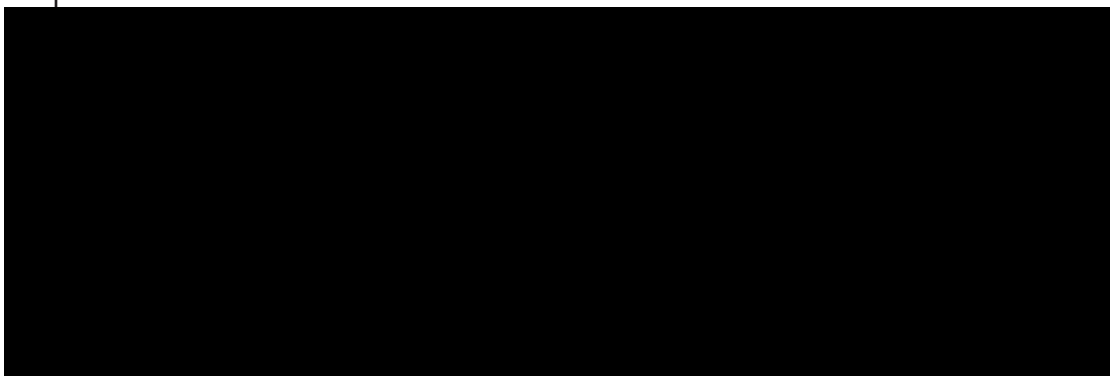
1 Dragon -- withdrawn.

2 You described the purpose of the Dragon
3 Program as expanding Intuitive's services to more
4 areas; is that right?

5 A Yeah, I don't -- I don't think I limit it to
6 the word "areas." But providing more access to our
7 platform and to our services, yes.

8 Q A refurbished product offering would allow
9 for more cost-conscious customers to potentially gain
10 access to the da Vinci robot in the EndoWrist; right?

11 A Not according to our tests. Because a
12 refurbished program didn't equate to a reduced cost
13 for us. I would -- I would say that a lower cost per
14 use has the potential which we don't have any proof
15 yet to provide more access in the marketplace.



21 Q I'm just asking you about if you know about
22 what the percentage of discounts was that was proposed
23 with Dragon.

24 A I don't recall.

25 MR. ERWIG: Let's look at the next exhibit.

1 That will be this PowerPoint that you see embedded in
2 this document here. I'll take this exhibit down.

3 That will be Exhibit 38. That will be
4 "Attach 2 DeSantis to Goodson."

5 (Document remotely marked Exhibit 38
6 for identification.)

7 MR. ERWIG: Q. You see this on the screen?
8 Well, actually withdrawn. Let's stop the screen
9 share.

10 Let's go off the record.

11 THE VIDEOGRAPHER: We are going off the
12 record at 1:58 p.m.

13 (Recess taken.)

14 THE VIDEOGRAPHER: This marks the start of
15 Media No. 7.

16 We are back on the record at 2:12 p.m.

17 MR. ERWIG: Q. Mr. DeSantis, did you take
18 some notes in preparation for this deposition?

19 A Yes.

20 Q Did you have those notes up on the screen
21 while I was asking questions earlier?

22 A Yes. I'm sorry. I had them open on the
23 computer up until the point where you asked about
24 them, and then I closed them at that point.

25 Q When you say up until the point that I asked

1 about them, what do you mean by that?

2 A So multiple windows open on a computer. So
3 it was a hidden window behind this full screen here.
4 But when you asked about them, I got the feeling that
5 it shouldn't be open on my screen, so I just closed
6 them. But at no time did I refer to them.

7 Q Did you refresh your recollection using those
8 notes prior to this deposition?

9 A Yes.

10 Q Did you reference those notes during any
11 breaks during the deposition?

12 A No.

13 MR. ERWIG: I'm going to screen share our
14 next exhibit. This would be the PowerPoint that I
15 believe we previously marked as Exhibit 38.

16 Q You see this on that screen in front of you?

17 A Yes.

18 Q Does this appear to be a PowerPoint titled
19 "Secondary Markets"?

20 A Yes.

21 Q You recognize this PowerPoint?

22 A Not specifically at this point.

23 Q Let's go through it together.

24 The -- what do you understand is meant by a
25 "Secondary Market"?

1 A People even at Intuitive have used that to
2 mean different things, so I would -- you know, I'd
3 have to see the context for it.

4 Q Well, scrolling down to Slide 3, where it
5 says "Copy benefits of secondary markets," first
6 bullet point is "Create a lower cost supply chain"; do
7 you see that?

8 A I do, yes.

9 Q The second bullet point is:

10 "Combat utilization of 3rd party after market
11 refurb or reprogrammed instrument."

12 Do you see that?

13 A I do.

14 Q Refurb; do you understand that to mean
15 refurbished?

16 A Yes.

17 Q The third bullet point is "Accelerate capital
18 pipeline"?

19 A Yes.

20 Q Can you explain why a secondary market might
21 create a lower cost supply chain for Intuitive?

22 A So now based on this slide added to the title
23 slide, this definition of secondary markets means
24 reusing something coming back from the field.

25 So could you repeat the question? Sorry.

1 Q Well, that's -- that's helpful. I want --
2 want to clarify that.

3 A secondary market in this context would be
4 an instrument returned to Intuitive and refurbished to
5 be resold to customers; is that right?

6 A More broader than that. The reference to
7 "capital" here is even capital coming back from the
8 field and being reused and sold back to customers.
9 But yes, inclusive of really anything that -- that we
10 sell.

11 Q So the secondary market refers to Intuitive
12 getting back things that it sold to customers; right?

13 A Yes, I think so. I think I would say kind of
14 a resell market in one way, shape, or form or another.

15 Q The second bullet point, why would a
16 secondary market "Combat the utilization of 3rd party
17 after market refurb or reprogrammed instruments"?

18 A Supply and demand. You know, so if there is
19 a demand or a need for secondary instruments,
20 remanufactured instruments, us providing them,
21 satisfying that, in our view, would be the optimal way
22 to do that.

23 Q Ultimately Intuitive did not enter into that
24 market; right?

25 A Not to date, no.

1 Q The reason for that is that Intuitive was
2 able to effectively stop Rebotix using letters to
3 hospitals, for example; right?

4 A No. The reason we didn't get into it is
5 because it financially didn't just make sense to us.

6 Q It was also not necessary to combat
7 utilization of third-party aftermarket refurbished
8 instruments; right?

9 MR. RUBY: I would object to the form of the
10 question. To me it's unintelligible, but the witness
11 can answer it if he -- if he can.

12 THE WITNESS: Yeah, if you wouldn't mind
13 rephrasing it or repeating it if you can't rephrase
14 it.

15 MR. ERWIG: Sure.

16 Q Intuitive took some actions in response to
17 the services Rebotix was offering to hospitals; true?

18 A We did, yes.

19 Q One of those actions was sending letters
20 informing the hospitals they were in breach of the
21 sales agreement they had signed with Intuitive; right?

22 A That was part of the letter, yes.

23 Q Now, another action was telling hospitals
24 that if hospitals continues using Rebotix, that
25 Intuitive would no longer service their da Vinci

1 systems?

2 A We were essentially informing them of, one,
3 what they were engaged in. Two, what the implications
4 were. And, you know, three, what that meant for our
5 contractual agreements with them, yes.

6 Q One of the actions that Intuitive would take
7 if a hospital continued using Rebotix was it would
8 stop servicing that hospital's da Vinci robot; true?

9 A We would comply with our contract if they
10 were not.

11 Q Sorry. I don't think I quite understand that
12 answer.

13 A So when we sell a system, we basically
14 have -- have a contingency that they will not use
15 third-party service, et cetera, because of the danger
16 of doing it. And everything I mentioned earlier about
17 the jeopardizing of the company's brand, its quality,
18 image, et cetera.

19 But regardless of the rationale, if they do
20 not comply with that, then we won't have a
21 relationship with them going forward which would
22 include we won't service and we won't provide
23 consumables.

24 Q If a da Vinci robot is not serviced by
25 Intuitive, it's ultimately unusable for surgery;

1 right?

2 A I don't know. I don't -- I believe it can
3 continue to be used.

4 Q Well, there's certain areas that the robot
5 can generate that only Intuitive can resolve with its
6 proprietary software; true?

7 A I believe so. We're in an area that's not --
8 not my expertise.

9 Q And it's your understanding that certain
10 service issues, if they're not repaired by -- it's
11 your understanding that certain service issues, if
12 they're not addressed by Intuitive representative,
13 they will render the robot unusable for surgery;
14 right?

15 A I don't know that.

16 Q Look at Slide 4 with you. The slide titled
17 "Dragon"; do you see that?

18 A Yes.

19 Q There's some "User Focused" and "Company
20 Focused" bullets on this slide; do you see that?

21 A Yes.

22 Q User "Focus Bullet" says "Confidence" --

23 THE REPORTER: Hold on. Counsel, if you
24 would please, your papers.

25 MR. RUBY: Sorry.

1 MR. ERWIG: Withdrawn.

2 Q One of the bullet points says:

3 "Confidence Displace non-validated 3rd party

4 re-programmers."

5 Is that right?

6 A Yes.

7 Q Under the "Company Focused" bullet there's

8 "Advancement," "Offensive" and "Defensive"; do you see

9 that?

10 A Yes.

11 Q And the "Offensive" bullet, that reads:

12 "Create lower pricing option while

13 maintaining acceptable margins."

14 Do you see that?

15 A I do.

16 Q That's similar to what we saw in the Mohr

17 document that we looked at earlier; right?

18 A Yes.

19 Q And the "Defense" bullet says:

20 "Displaced non-validated 3rd party

21 re-programmers where already present."

22 Right?

23 A Yes.

24 Q And "Reclamation removes product from field

25 increase entry barriers for other 3rd party

1 reprogrammers."

2 Right?

3 A Yes.

4 Q One of the defensive elements of Project
5 Dragon was to "Displace non-validated 3rd party
6 re-programmers"; right?

7 A So again, I don't want that statement to be
8 too narrow. This is under the title of "Company
9 Focused." We feel that defending the quality and the
10 brand and the reputation of our entire platform is
11 paramount to patients/people but also to the company.
12 So when we talk about "Company Focused" on "Defensive"
13 here, this is what's going -- you know, this is the
14 intent, is the non-validation, to stop kind of
15 unauthorized who knows what quality-system level
16 third-party re-programmers of our instrument.

17 Q The time that this slide deck was created,
18 Intuitive had not tested any third-party reprogramed
19 EndoWrist; true?

20 A Again, whatever came back through our quality
21 system, did we test it like we test everything else?

22 Yes. Did we do V&V and life testing on a
23 third-party's product to our specs? No.

24 Q I'm going to stop screen sharing this
25 exhibit.

1 Now, ultimately Intuitive did not pursue an
2 instrument refurbishment program for the da Vinci Si
3 or for the da Vinci Xi; right?

4 A Not to date.

5 Q It's because instrument refurbishing, that's
6 something that's not profitable for Intuitive; right?

7 A Yeah. Financially it turned out to be
8 essentially a wash between building new instruments
9 and going through the entire process of collecting and
10 remanufacturing to original specs, et cetera.

11 Q And there's no indication that refurbishing
12 would suddenly be profitable and -- in the future;
13 right?

14 A I don't know that.

15 Q Well, what's your understanding of the
16 current status of Project Dragon?

17 A Project Dragon right now is on the shelf. It
18 is something that we continue to have conversations
19 about different components and parts. And we look at
20 all ways to kind of satisfy customer needs or
21 perceived needs. But right now we're not actively
22 pursuing a refurbishing program.

23 Q And do you understand that one of the reasons
24 hospitals return to Rebotix was because the services
25 offered at a lower price point than purchasing a new

1 EndoWrist from Intuitive?

2 A I'd say one of the reasons, yes.

3 Q Is it your understanding that hospitals are
4 concerned about patient safety?

5 A Yes.

6 Q Is it your understanding that hospitals are
7 concerned about maximizing good outcomes for their
8 patients?

9 A Yes.

10 Q Do you have any reason to believe that a
11 hospital would deliberately use a -- withdrawn.

12 Do you have any reason to believe that a
13 hospital would use an unsafe instrument in a surgery?

14 A If that hospital -- hospital was
15 well-informed, I -- you know, I don't believe they
16 would use unsafe instruments. And, in fact, when we
17 inform most of the hospitals of the facts of the
18 matter, they stopped using third parties.

19 Q When you say you informed the hospitals, one
20 of the things that you've told the hospitals was that
21 Intuitive would cancel the sales contract with the
22 hospitals if they continued using services like
23 Rebotix; right?

24 A That was usually a third or fourth step. Our
25 first was just to inform them and clarify, because

1 there was a lot of confusion out there that this was
2 not authorized, and we did not have a relationship
3 with Rebotix, and there was a bunch of other
4 confusions. But first it was just --

5 THE REPORTER: I'm sorry. First it was? The
6 paper hit the mic.

7 THE WITNESS: First it was to have a
8 conversation just clarifying the -- the facts of the
9 matter.

10 MR. ERWIG: Q. And the letter that was sent
11 to hospitals, you're aware that that included a
12 section about the hospitals being in breach of the
13 contract with Intuitive; right?

14 A I believe so. But the letter was not our
15 first step.

16 Q Right.

17 A first step would be a conversation with a
18 hospital; right?

19 A Yes.

20 Q And if the hospital continued using Rebotix,
21 then Intuitive would send a letter; right?

22 A We laid out a multistep process that would
23 eventually get to the point where we didn't want to
24 get to. But again, to defend the reputation of the
25 company and our platform. Then again, if the hospital

1 continued to use something that we felt was
2 unauthorized, unsafe, we would terminate our
3 relationship with the hospital.

4 Q Sir, are you aware that hospitals frequently
5 asked Intuitive to provide data about why Rebotix's
6 instruments were not safe to be used with the da Vinci
7 robot?

8 A I've seen a couple of e-mails that stated
9 that, yes.

10 Q At any point was Intuitive able to provide
11 any data that indicated that refurbished EndoWrists
12 by -- withdrawn.

13 Was Intuitive ever able to provide any data
14 that indicated that EndoWrists refurbished by Rebotix
15 were unsafe?

16 A So don't we have Rebotix's testing protocols,
17 life testing, quality system, returns, relationship
18 with the FDA. We don't have any of that data.

19 The data we have is the testing we've done
20 and why we had indicated ten lives, et cetera and that
21 we certainly have provided.

22 Q In other words Intuitive provided hospitals
23 with some information about its own testing
24 procedures; right?

25 A Yes.

1 Q Its own submissions to the FDA?

2 A I believe so.

3 Q And some other information about the
4 effective contractual relationship between Intuitive
5 and the hospital going forward; right?

6 A Yes.

7 Q Intuitive did not provide any data about the
8 safety of Rebotix's refurbished EndoWrists; right?

9 A I don't believe so. We're not in a position
10 to provide Rebotix's data.

11 Q Well, one -- one thing that Intuitive could
12 have done would be to take an EndoWrist that was
13 refurbished by Rebotix and see whether it meets the
14 specs set by Intuitive; right?

15 A That would really be meaningless on a one-off
16 basis. We would -- to properly conduct V&V testing
17 there's a lot of requirements that -- that are
18 involved, and it's more than just taking one
19 instrument and testing it.

20 Q Well, at this level you could have started
21 with one instrument; right?

22 A I think --

23 MR. RUBY: Objection to form of the question.

24 THE WITNESS: I think that would be
25 continuing to add to the confusion. I think that

1 would be meaningless.

2 MR. ERWIG: Q. Well, one thing that would be
3 meaningful would be for Intuitive to have an actual
4 sense of whether the instruments refurbished by
5 Rebotix, whether those were safe; right?

6 A Intuitive has 20 years and millions of
7 procedures of instrument experience that -- you know,
8 that we -- we know that what we do is safe, and we
9 have a lot of information about ten lives, and quality
10 levels, and the complaints, et cetera.

11 So, you know, if -- I believe when we're
12 dealing with humans, and people and patients, that the
13 onus is on, you know, the company providing to ensure
14 that they're safe.

15 Q Well, in the 20 years that Intuitive has been
16 in business and of the millions of procedures,
17 Intuitive has never examined whether EndoWrists can be
18 safely repaired; right?

19 A We have never taken on a project to repair
20 the EndoWrist. We've evaluated Project Dragon which
21 is a remanufacture. But as far as just repairing, no.
22 And it's for a good reason.

23 Q Well, Intuitive has no data on the
24 effectiveness or the -- withdrawn.

25 Intuitive has no data on the safety of

1 repairs of EndoWrists; true?

2 A No. I think we're talking past each other a
3 little bit on -- you know, we -- we have a lot of data
4 on how these instruments wear down, how they fail,
5 what they look like after ten lives. It's why we
6 chose to do what we want, what we -- what we did on
7 Project Dragon which was it throw out things like
8 cables and grips that are the highest failure modes
9 based on lots and lots of data.

10 And, you know, for us to look across it, at
11 somebody else doing that -- so anyway, we made our
12 decisions on our programs based on our judgment, based
13 on our specs, based on our history. And we feel good
14 about that.

15 Q And then the span of that time and
16 experience, one of the areas that Intuitive did not
17 explore was whether it was possible to repair an
18 EndoWrist where, for example, the cables had become
19 loose; right?

20 A We know exactly how cables perform over time.
21 And when cables become loose, there's a lot of things
22 going on there that are dangerous. So no, we have not
23 tried to repair loose cables.

24 Q Another thing that might be an issue with an
25 EndoWrist would be misaligning graspers; right?

1 A Could be, yes.

2 Q Has Intuitive ever examined whether it's
3 possible to repair misaligned graspers?

4 A It's the same type of answer. The failure of
5 the grips is one of our highest failure modes. They
6 fail usually because they break. They break of a
7 brittle failure.

8 Realigning graspers means that you are
9 bending back into shape typically, which means you're
10 taking them past their yield point which makes them
11 more brittle, which would add to our failure rate. So
12 no, we haven't.

13 Q Another potential failure might be the
14 scissors, even if they're German-manufactured
15 scissors, those might get dull; right?

16 A Yes.

17 Q Has Intuitive ever tested whether it's
18 possible to repair those scissors by sharpening them
19 so they cut effectively?

20 A So scissor performance is more than just the
21 blade. It's the sharpness, it's the hardness, it's
22 the contact angle. So the cost involved in doing that
23 is -- for us did not justify the need to do the --
24 the -- you know, the -- the plan to sharpen them.

25 Q Three things I want to take your through in

1 turn. Did Intuitive -- you mentioned -- withdrawn.

2 You mentioned sharpness, hardness and contact
3 angle; is that right?

4 A Yes.

5 Q Did Intuitive ever test whether it was
6 possible to repair the scissors so that its sharpness
7 was again adequate?

8 A No.

9 Q Did Intuitive ever test scissors to determine
10 whether a repair could make the hardness adequate?

11 A No. Nor -- nor contact angle, and all three
12 these of those parameters play off of each other, you
13 know.

14 Q So at no point was there any testing
15 conducted on any of those factors for repairing
16 scissors at Intuitive; true?

17 A True. Because based on our engineering
18 judgment and our knowledge, it would not have been
19 fruitful.

20 Q Another EndoWrist form is a -- is a needle
21 driver; right?

22 A Yes.

23 Q My understanding is that a -- withdrawn.

24 We've discussed earlier that a needle driver
25 is a tool that holds the needle in place for a

1 surgeon; right?

2 A Yes.

3 Q What's the most common failure mode for
4 needle drivers? Well, withdrawn.

5 A Yeah, I don't know.

6 Q Sorry. Yeah, let me -- let me ask a better
7 question. Withdrawn.

8 The -- one of the failure modes for needle
9 drivers is that the -- the graspers no longer hold the
10 needle tightly; right?

11 A Yeah. I would have said either grip force or
12 an unintuitive motion.

13 Q And we'll get to unintuitive motion. I just
14 want to focus on -- on grip forth -- grip force right
15 now.

16 Has Intuitive formed any testing to see
17 whether it's possible to repair the grip force of a
18 needle driver EndoWrist to adequate specifications?

19 A So grip force is related to the cables and
20 re-tensioning, et cetera, you know. I can go back to,
21 you know, what I said earlier about cable and cable
22 life. Cable stretches. It's not a good indicator --
23 for future life. And that's how you lose grip force.
24 Either that or the grips are bent.

25 And then I would go back to the other

1 statement about the brittle failure on the grips.

2 Q You also mentioned unintuitive -- well,
3 withdrawn.

4 So it's true that Intuitive has not done any
5 testing as to whether grip force can be adequately
6 repaired for a needle driver EndoWrist; right?

7 A That's right. We've used our engineering
8 judgment and said it's not fruitful to do that.

9 Q By "not fruitful to do that," you mean it's
10 not fruitful to test whether that repair is possible;
11 right?

12 A Meaning that in our judgment it's dangerous.

13 Q Well, if you're testing whether it could be
14 repaired, that process, there's no harm to human life
15 when you're just testing a repair; right?

16 A And so everything we've talked about and we
17 do would require that we bring things back to at least
18 our original specs. We're not going to -- we're not
19 going to compromise on quality or performance when it
20 comes to people.

21 What we know is bending parts back into shape
22 or reusing cables that have stretched and started to
23 fray will -- you know, again based on our engineering
24 judgment, and our experience, it is -- will not bring
25 them back to spec and will not allow them to last the

1 indicated life, and it's dangerous. They have been
2 moved closer to their failure point.

3 Q Well, you might have to replace some parts if
4 a cable is fully torn. For example, that would have
5 to be replaced; right?

6 A Yes. And that's why we went about Project
7 Dragon the way we did.

8 Q But in the -- in the process of Project
9 Dragon, did you test whether the specific grip force
10 for an EndoWrist, whether that could be repaired?

11 A I'd be surprised if we did, because grip
12 force is related to cable stretch.

13 Q One of the other things you mentioned was
14 unintuitive motion, and we discussed earlier that
15 sometimes hospitals experience unintuitive motion in
16 EndoWrists before their use counter expires; right?

17 A It's very rarely.

18 Q It certainly happens though; right?

19 A If it does, it's a significant issue for us
20 that we -- we jump over -- all over and fix.

21 Intuitive motion is a pillar of our platform.

22 Q Has Intuitive tested whether it's possible to
23 repair EndoWrists that are experiencing unintuitive
24 motion?

25 A So the motion of the grips is dictated by --

1 through a Tele-OP loop dictated by -- by the cables in
2 the drives.

3 So when you start to get unintuitive motion,
4 it's usually bench part or stretched cables. In
5 either one of those cases, just to get right to the
6 point, we -- the parts are closer to their failure
7 mode. So it's not a project we would undertake based
8 on our -- on our engineering knowledge and judgment.

9 Q It's not something that Intuitive ever did,
10 in fact, undertake; right?

11 A No.

12 Q To this date, in fact, Intuitive has never
13 studied whether it's possible to repair EndoWrists to
14 their original specifications; right?

15 A We've done it the way we know best which is
16 to repair them by replacing the parts that need to be
17 replaced.

18 Q Well, let's -- withdrawn.

19 Are you aware that hospitals report using
20 Rebotix's instruments in surgeries and have no issues
21 with those instruments?

22 MR. RUBY: I'll object to the form of the
23 question. It assumes a fact which isn't a fact. But
24 you may go ahead and answer.

25 THE WITNESS: I don't know that I've seen

1 reports from hospitals talking about their

2 satisfaction with Rebotix's instruments.

3 MR. ERWIG: Q. Intuitive does not want its
4 customers to use Rebotix's to repair their EndoWrists;
5 true?

6 A Intuitive doesn't want anybody to adulterate
7 our platform in any way that can't be assured that
8 it's a sufficient quality level that we have --
9 that -- that we provide our sales.

10 Q And that's at a more general level. But to
11 get specific, that means that Intuitive does not want
12 hospitals to use Rebotix to repair EndoWrists; right?

13 A True, because we feel it's unsafe.

14 Q In fact, Intuitive will ultimately stop
15 servicing the da Vinci robots for hospitals if they
16 continue using Rebotix; right?

17 A As a last resort, yes.

18 MR. ERWIG: Let's go off the record.

19 THE VIDEOGRAPHER: We are going off the
20 record at 2:43 p.m.

21 (Recess taken.)

22 THE VIDEOGRAPHER: We're back on the record
23 at 2:48 p.m.

24 (Document remotely marked 39
25 for identification.)

1 MR. ERWIG: I'll show you our next exhibit.

2 This will be "7'24'17 Attach from Morales to

3 da Vinci."

4 Q Do you see this on the screen in front of

5 you?

6 A Yes.

7 Q Do you recognize this document? You can

8 scroll through it.

9 A Yeah, I don't recall the document

10 specifically, but...

11 Q Does this look a slide titled "Customer Value

12 of Dragon"?

13 A Yes.

14 Q And there's some text below here, and it

15 reads:



2 Q Is that generally consistent with your
3 understanding of what the discount for Project Dragon
4 instruments would have been?

5 A I really don't have that data point in my
6 head, even a range.

7 MR. ERWIG: Take this exhibit down.

8 I have no further questions at this time.

9 MR. RUBY: I have no questions.

10 MR. ERWIG: Thank you, Mr. DeSantis.

11 Let's go off the record.

12 MR. RUBY: Thank you. Thank you, everybody.

13 THE VIDEOGRAPHER: This concludes the
14 deposition.

15 We are going off the record at 2:50 p.m.

16 (WHEREUPON, the deposition end the
17 at 2:50 p.m.)

18 ---oOo---

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25

1 ERRATA SHEET

2 Case Name:

3 Deposition Date:

4 Deponent:

5 Pg. No. Now Reads Should Read Reason

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20 _____

21 _____ Signature of Deponent

22 SUBSCRIBED AND SWORN BEFORE ME

23 THIS _____ DAY OF _____, 2021.

24 _____

25 (Notary Public) MY COMMISSION EXPIRES:_____

1 CERTIFICATE OF REPORTER

2
3 I, ANDREA M. IGNACIO, hereby certify that the
4 witness in the foregoing remote deposition was by me
5 remotely sworn to tell the truth, the whole truth, and
6 nothing but the truth in the within-entitled cause;

7 That said deposition was taken in shorthand
8 by me, a disinterested person, at the time and place
9 therein stated, and that the testimony of the said
10 witness was thereafter reduced to typewriting, by
11 computer, under my direction and supervision;

12 That before completion of the deposition,
13 review of the transcript [] was [x] was not
14 requested. If requested, any changes made by the
15 deponent (and provided to the reporter) during the
16 period allowed are appended hereto.

17 I further certify that I am not of counsel or
18 attorney for either or any of the parties to the said
19 deposition, nor in any way interested in the event of
20 this cause, and that I am not related to any of the
21 parties thereto. Dated: May 28, 2021

22
23 _____
24 ANDREA M. IGNACIO, RPR, CRR, CCRR, CLR, CSR No. 9830
25

FILER'S ATTESTATION

I, Kenneth A. Gallo, am the ECF User whose ID and password are being used to file this document. In compliance with Civil Local Rule 5-1(i)(3), I hereby attest that the signatories identified above have concurred in this filing.

Dated: November 11, 2024

By: /s/ Kenneth A. Gallo

Kenneth A. Gallo

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